NOAA-POES/OSD-2001-0005R0UD0
December 20, 2001

POES IJPS

Polar-orbiting Operational Environmental Satellite (POES)

IJPS Product Generation and Distribution System Requirements

December 20, 2001

Prepared by:

U.S. Department of Commerce
National Oceanic and Atmospheric Administration (NOAA)
National Environmental Satellite, Data, and Information Service (NESDIS)

NOAA/NESDIS

Polar-orbiting Operational Environmental Satellite (POES)

IJPS Product Generation and Distribution System Requirements

December 2001

***Prepared by*:**

U.S. Department of Commerce
National Oceanic and Atmospheric Administration (NOAA)
National Environmental Satellite, Data, and Information Service (NESDIS)

Approval Page

Document Numbers:

NOAA/NESDIS
POES Series

NOAA-POES/OSD-2001-0005R0UD0
December 20, 2001
DCN 0

Document Title Block:

Polar-orbiting Operational Environmental Satellite (POES)

IJPS Product Generation and Distribution System Requirements

PROGRAM: POES IJPS	**DOCUMENT RELEASE DATE:**
APPROVALS	
GROUP: POES PROGRAM OFFICE DATE NAME: Michael Mignogno	GROUP: POES PROGRAM OFFICE DATE NAME: H. James Silva
GROUP: OFFICE OF SYSTEMS DEVELOPMENT DATE NAME: Pamela M. Taylor	GROUP: OFFICE OF SYSTEMS DEVELOPMENT DATE NAME: Stacy L. Bunin
GROUP: NAME:	
CCB RELEASE APPROVAL: **DATE** NAME:	

Document Change Notice

DCN NO.: **1**	DATE: **December 20, 2001**	PROGRAM : SYSTEM: **POES IJPS**	PAGE NO.: **1** of **1**

DOCUMENT TITLE:
Polar-orbiting Operational Environmental Satellite (POES) IJPS Product Generation and Distribution System Requirements

NOAA/NESDIS POES Series

DOCUMENT NO.: **NOAA-POES/OSD-2001-0005R0UD0**

CHANGE PAGE HISTORY

No.	Page Number(s)	Update Instructions (Insert / Delete / Replace)*	Reason for Change
0	Complete Document	Original baseline version of this document	See COMMENTS below

COMMENTS: This is the first publication of this document; as such, it comprises the DCN 0 baseline.

NOTES:

*EXAMPLES: A*Insert change pages 6.2-6 through 6.2-9 following page 6.2-5"*
AReplace pages 3.4-1 through 3.4-10 with change pages 3.4-1 through 3.4-10b@
*AReplace page 4.5-24 with change page 4.5-24; delete pages 4.5-25 through 4.5-30***"**

Version Description Record

DOCUMENT TITLE:
Polar-orbiting Operational Environmental Satellite (POES) IJPS Product Generation and Distribution System Requirements

NOAA/NESDIS POES Series

DOCUMENT NUMBER:	SYSTEM: POES IJPS	DOCUMENT BASELINE ISSUE DATE:
Baseline: NOAA-POES/OSD-2001-0005R0UD0 Current: Same		December 20, 2001

DOCUMENT CHANGE HISTORY

DCN No.	Revision/Update Nos.	Date	DCN No.	Revision/Update Nos.	Date
0	R0UD0	December 20, 2001			

NOTES:

Preface

This document comprises the NOAA/NESDIS baseline publication of the Polar-orbiting Operational Environmental Satellite (POES) IJPS Product Generation and Distribution System Requirements, (December 20, 2001, issue). This document is Revision 0, DCN 0 (document number NOAA-POES/OSD-2001-0005R0UD0).

This document identifies requirements for the NOAA product generation and distribution processing systems for IJPS. The intent is to provide a baseline future upgrades needed to perform Metop satellite related functions required to sustain the joint NOAA/EUMETSAT system called the Initial Joint Polar-orbiting Operational Satellite System (IJPS).

Table of Contents

List of Figures

List of Tables

1 Introduction

The National Oceanic and Atmospheric Administration (NOAA) and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) signed a Memorandum of Agreement in November 1998 for participation in the Initial Joint Polar-orbiting Operational Satellite System (IJPS). The IJPS is a cooperative effort between the United States and the Europeans to share responsibility for polar satellite operations and to provide the continuity of observations from polar-orbiting satellites for operational meteorological and environmental objectives.

Since the early 1960's, the National Environmental Satellite, Data, and Information Service (NESDIS) has operated and maintained Polar-orbiting environmental satellites in support of NOAA's mission. Since 1978, NOAA's Polar-orbiting Operational Environmental Satellite (POES) system has operated with a two-satellite constellation in circular, near polar, sun-synchronous orbits. The current system is operating with two fifth-generation advanced TIROS-N (ATN) satellites. NOAA-15 was launched on May 13, 1998 into a morning orbit with a nominal 0730 local solar time (LST) southbound Equator crossing time. NOAA-16 was launched on September 21, 2000 into an afternoon orbit with a nominal 1340 LST northbound Equator crossing time.

The IJPS consists of two independent, but fully coordinated, polar satellite systems. In support of the IJPS, NOAA satellites NOAA-N and -N′ will be flown in a polar orbit with an afternoon (P.M.) equatorial crossing time. EUMETSAT, working together with the European Space Agency (ESA), will develop the Meteorological Operational (Metop) series of satellites to be flown in a polar orbit with a mid-morning (A.M.) equatorial crossing time. The mid-morning and afternoon satellites will each carry a set of jointly provided common instruments, plus additional instruments specific to each orbit and operating agency. Through the use of these satellites, NOAA and EUMETSAT will support the generation of products and services for their respective user communities.

1.1 Purpose

The purpose of this document is to establish, within the NESDIS POES documentation system, the IJPS requirements that are applicable to the POES Product Generation and Distribution system. The requirements are for Level 2 and 3 products derived from instruments aboard operational polar-orbiting operational environmental satellites during the IJPS era.

The purpose of this document is to highlight four areas of development:

1. Modifications of baseline product generation systems to continue NOAA's morning mission.
2. Production of additional high-resolution products using Metop's AVHRR full resolution capability.
3. Production of additional derived products from Metop specific instruments.
4. Product changes resulting from instrument upgrades.

1.2 Scope

This document defines product generation and distribution requirements resulting from changes to the NOAA series of satellites and from the additional data processing from the Metop series of satellites. Product Generation and Distribution (PG&D) begins with receiving 1b data sets and ends with the production of NOAA Level 2 and Level 3 products from the various product processing systems.

1.3 Document Organization

Section 1 gives an introduction and purpose of this document, and lists the applicable and reference documentation that provide source and input information to the scope of requirements of the Polar Product Generation and Distribution system.

Section 2 describes the Polar mission objectives that will be supported in the IJPS time period and a brief description of the baseline POES and Metop systems.

Section 3 provides the formal requirement statements for product processing systems.

Appendices include the Requirement Traceability and Verification Matrix, the Consolidated Products List, and the Acronym List.

1.4 Applicable Documents

Table 1-1 presents a list of Applicable Documents (AD-#) that contain information and/or requirements that need to be applied for the successful completion of the IJPS program

Table 1-1. Applicable Documents

Doc #	Title	Reference Number	Issue	Date
AD-1	POES System Requirements for Initial Joint Polar-orbiting Operational Satellite System	NO-IJ/OSD-99-0004-R0U0		6 November 2001
AD-2	Information Processing Division (IPD) Functional Area System Requirements			2 August 2001
AD-3	Integrated Operational Requirements Document (IORD) II			7 May 2001

1.5 Reference Documents

Table 1-2 presents a list of Reference Documents (RD-#) that provide additional useful information for program implementation.

Table 1-2. Reference Documents

Doc #	Title	Reference Number	Issue	Date
RD-1	NOAA-KLM User's Guide http://www2.ncdc.noaa.gov/docs/klm			September 2000 Revision
RD-2	NOAA Global Vegetation Index User's Guide			July 1997 Revision
RD-3	EPS Core Ground Segment Requirements Document	EPS/GGS/REQ/95327	Issue 4, Draft A	3 June 1999
RD-4	EPS/METOP System Requirement Document	EPS/SYS/REQ/93001	3.2	29 January 1998

2 IJPS Polar Product Generation and Distribution System Definition

2.1 Mission Objectives

The NESDIS mission is to provide and ensure timely access to global environmental data from satellites and other sources to promote, protect, and enhance the Nation's economy, security, environment, and quality of life. This mission is accomplished with the use of the POES satellites, which collect global data for land, ocean, atmospheric, and space environment applications in support of meteorological, hydrological, marine, agricultural, transportation, and energy user communities.

In the IJPS time period, the POES system will continue to provide environmental data from an afternoon orbit, while the Metop satellite will provide data from common instruments from a morning orbit. The POES system will also process and distribute the environmental data received from the additional instruments embarked on Metop and POES satellites in accordance with NOAA's data processing priorities, and agreements with EUMETSAT [AD-1].

2.2 IJPS Common Instrumentation

The core instrument set to be carried on both the mid-morning Metop and the afternoon POES spacecraft consists of the instruments in Table 2-1:

Table 2-1. IJPS Core Instrument Set

Instrument	Description
Advanced Very Resolution Radiometer AVHRR/3	Imaging radiometer with six channels in the range of 0.6-12 microns (3 visible/near infrared (IR) and three channels in the infrared region). Used for generating global imagery, vegetation index, sea surface temperature, aerosols, Earth radiation budget, and snow and ice cover products.
High Resolution Infrared Radiation Sounder HIRS/4	Sounder with 19 infrared channels in the range 3-15 microns, and one visible channel. Used for generating atmospheric temperature and moisture soundings, Earth radiation budget, and ozone measurements.
Advanced Microwave Sounding Unit-A AMSU-A1/-A2	Microwave sounder with 15 channels in the range 23-90 GHz. Used for generating atmospheric temperature soundings and surface and hydrological measurements.

Instrument	Description
Microwave Humidity Sounder MHS	Microwave sounder with five channels at 89, 157, and around 183 GHz. Used for generating atmospheric moisture soundings and surface and hydrological measurements.
Space Environment Monitor SEM/2	Multi-channel charged-particle spectrometer. Used in monitoring Earth's radiation belts and solar activity.
Search and Rescue Satellite Aided Tracking System (SARSAT) SARP-2 (NOAA-N only) SARP-3 SARR	UHF receiver and signal processor and VHF/UHF/L-Band Transponder. Used for receiving distress signals from emergency beacons at international distress frequencies an retransmitting them at 1544.5 MHz.
ARGOS/Data Collection System DCS/2 (NOAA-N only) A-DCS (NOAA-N')	UHF receiver and signal processor. Used for relaying meteorological and other data transmitted from *in-situ* ground based sensors.

2.3 Mid-Morning Spacecraft Additional Payload

The mid-morning Metop spacecraft carries the additional instruments described in Table 2-2:

Table 2-2. Metop Specific Instruments

Instrument	Description
Infrared Atmospheric Sounding Interferometer IASI	Infrared Michelson Interferometer covering the 3.4-15.5 micron range. Used for generating global soundings, sea surface temperature, clouds, Earth radiation budget, and land measurements.
Advanced Scatterometer ASCAT	Pulsed C-band radar. Used for generating ocean surface wind speed measurements.
Global navigation satellite system Receiver for Atmospheric Sounding GRAS	Radio Occultation Receiver. Uses the reception of signals from the Global Navigation Satellite Systems for determining atmospheric temperature and moisture profiles.
Global Ozone Monitoring Experiment GOME-2	Nadir-viewing spectrometer. Used to generate ozone measurements.

2.4 Afternoon Spacecraft Additional Payload

The afternoon POES spacecraft carries the additional instrument described in Table 2-3:

Table 2-3. POES Specific Instrument

Instrument	Description
Solar Backscatter-Ultraviolet Spectral Radiometer SBUV/2	Spectral Radiometer with 12 channels in the range 252.0-322.3 nm (discrete mode) and 160-400 nm (scan mode). Used to generate ozone measurements.

2.5 Processing Level Definition

The NESDIS and EUMETSAT levels of processing are defined in Table 2-4 [RD-1, section 6.0; RD-3, RD-4]:

Table 2-4. NOAA and EUMETSAT Processing Level Descriptions

Processing Level	NOAA	EUMETSAT
0	Reconstructed, unprocessed instrument/payload data at full resolution; any and all communication artifacts introduced by the ground system are removed, e.g., synchronization frames, communication headers, and duplicate data.	Composed of instrument source packets over time interval (CCSDS packets) appended with auxiliary and ancillary data and associated quality flags. IASI level 0 data are precalibrated spectra and uncalibrated images.
1a	Reconstructed, unprocessed instrument/payload data at full resolution, time-referenced, and annotated with ancillary information, including radiometric and geometric calibration coefficients and georeferencing parameters, e.g., platform ephemeris, computed and appended but not applied to the Level 0 data.	Instrument reformatted level 0 data with auxiliary and ancillary data. Pixel localization and calibration coefficients are computed. They are appended along with all auxiliary and ancillary data required to compute them (e.g. calibration target counts and orbit parameters). IASI level 1a data are post calibrated spectra and calibrated images.
1b	Raw instrument data that has been quality controlled, assembled into discrete data sets, and to which Earth location and calibration information has been appended, but not applied.	Radiometrically corrected and calibrated data in physical units at full instrument resolution as acquired. IASI level 1b data are as level 1a but resampled to a nominal wavenumber grid.

Processing Level	NOAA	EUMETSAT
1b*	Uncompressed Level 1b data that contains appended earth located, time-tagged instrument counts with calculated calibration parameters for internal use only in product production.	N/A
1C	Level 1b* data with physical units on a pixel level plus geometry plus QC flags.	In the case of IASI apodized data with radiance clusters derived from AVHRR pixels in the IASI FOV. In the case of ATOVS, sounding and/or imager data remapped on a common instrument grid. N/A for ASCAT, GOME-2 and GRAS.
2	Derived geophysical variables at the same resolution and location as Level 1 source data.	Retrieved environmental variables at the same resolution and location as level 1 source data. May also include geophysical products derived by combination of data from various instruments on a single pass basis.
3	Products generated at a reduced spatial and/or temporal resolution.	Gridded point geophysical products on a multi-pass basis.

2.6 NESDIS IJPS Product Processing Model

Figure 1 is an overview of the NESDIS NOAA-N and -N' and Metop-1 and -2 Day 1 product processing systems. Global, orbital data from each of the instruments aboard NOAA-N and -N' are merged into the spacecraft datastream by the on-board processors (MIRP, TIP, AIP) which is then recorded for future playback. The datastream is received by a NOAA Command and Data Acquisition (CDA) site (Wallops Island, VA or Fairbanks, AK) and transferred, via a communications link, to the NESDIS Satellite Operations Control Center (SOCC) in Suitland, MD. The SOCC performs quality control and instrument health and safety monitoring and then transmits the science datastream to the NESDIS Central EnvironMental Satellite Computer System (CEMSCS). CEMSCS ingests the data and decommutates it into two Level 1a datasets; one unique for the AVHRR data and another containing all remaining instrument data (AIP 1a).

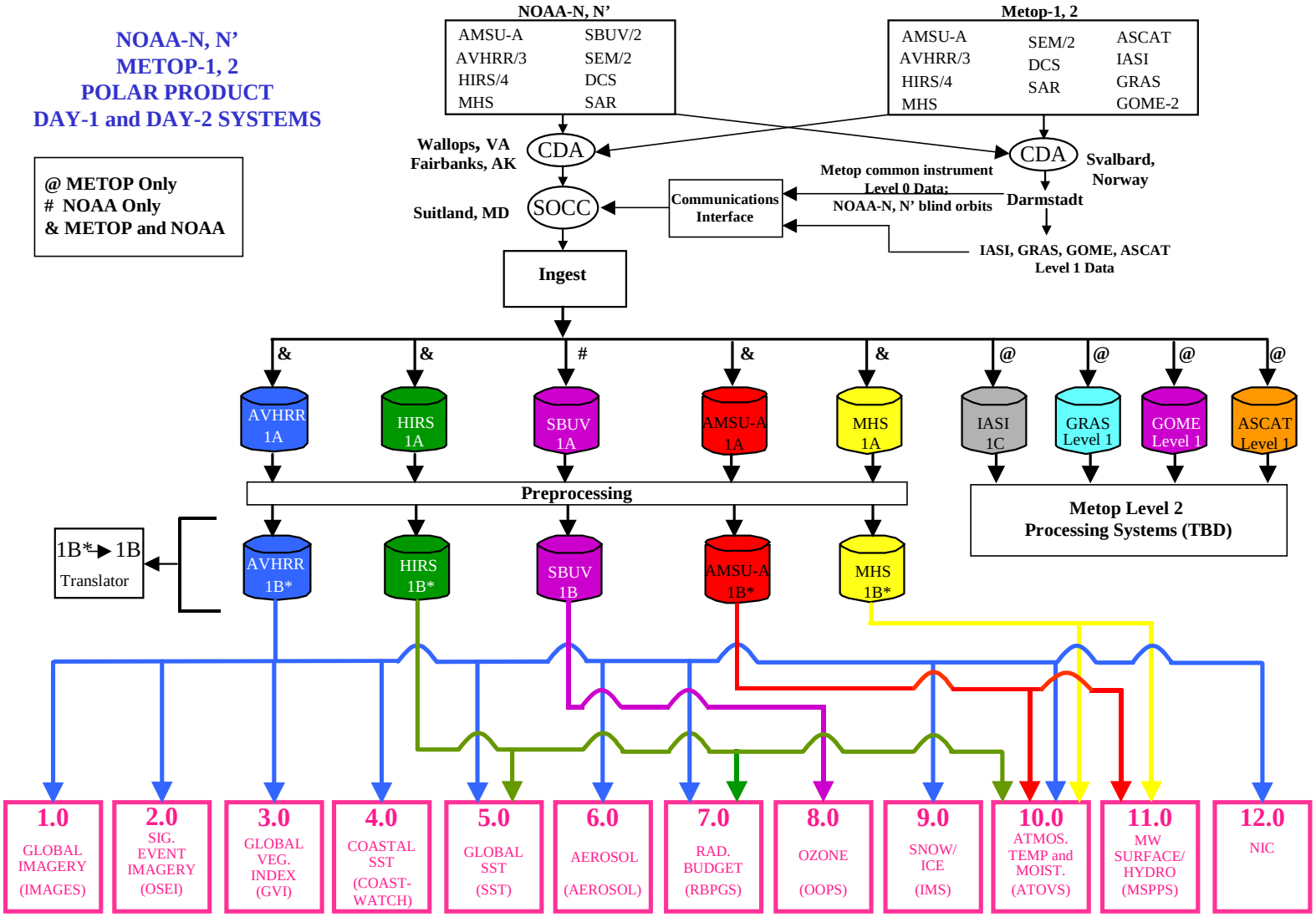

Figure 1. PGD Polar Product Day-1and Day-2 Systems.

The Metop satellite data, as well as NOAA-N and -N' blind orbit data that are not visible from the NOAA ground station in Fairbanks, are received by the CDA station in Svalbard, Norway. Data is then transmitted to EUMETSAT's Control Centre in Darmstadt, Germany, and Level 0 data from the NOAA instruments are made available at the Darmstadt interface for NOAA to retrieve. Metop Level 1 data, and possibly Level 2 data, from IASI, GRAS, GOME, and ASCAT are also made available to NOAA.

The 1a datasets for the common instruments aboard NOAA and Metop and NOAA's SBUV data are processed by the Information/Data Processing (IPS) element to individual instrument Level 1b or Level 1b* datasets, which contain earth located, time-tagged instrument counts with calculated calibration parameters appended. The AVHRR datastream from NOAA-N and -N' generates two Level 1b* datasets: the GAC (Global Area Coverage) data at 4 km resolution and selected LAC/HRPT (Local Area Coverage/High Resolution Picture Transmission) datasets at 1 km resolution. The Level 1b* datasets are uncompressed data used solely by the NESDIS internal product processing systems. A Level 1b* to Level 1b Translator provides packetized, storable 1b datasets from the AVHRR, AMSU-A, HIRS, and MSU for archive purposes and external user access. The translation can also be reversed to allow for any future required reprocessing of the archived data.

2.6.1 Types of data

After generation of the Level 1b* datasets numerous product processing systems are initiated. Currently there are plans to operate 12 Day-1 product processing systems: global imagery (IMAGES), significant event imagery (OSEI), global vegetation index (GVI), coastal sea surface temperature (CWPS), global sea surface temperature (SST), aerosols (AEROSOL), radiation budget (RBPGS), ozone (OOPS), snow and ice (IMS), atmospheric moisture and temperature soundings (ATOVS), microwave surface and precipitation (MSPPS), and National Ice Center products (NIC). Level 1, Level 2, and Level 3 products are made available to external users and to the archive.

Metop allows for recording and transmission of full resolution area coverage (FRAC) 1-km AVHRR data. HRPT 1-km data will also be available from the Metop AVHRR. The FRAC 1a dataset generates a FRAC 1b dataset. The FRAC 1b dataset generates two separate datasets: the 1-km LAC 1b, and the modified 4-km GAC 1b. This modified GAC dataset is converted from the full resolution Metop AVHRR datastream in order to continue the use of existing product software. In addition to the AVHRR datasets from the Metop satellites, there will be a different set of data from the NOAA-N and N' AVHRR. These are the 4-km GAC 1b*, the 1-km LAC 1b*, and the 1-km HRPT 1b*, similar to those processed from the NOAA-KLM AVHRR. The processing systems will use the AVHRR datasets from NOAA-N and N' and will possibly use some or all of the Metop AVHRR datasets. Processing systems that may use the full resolution FRAC data include global imagery (IMAGES), significant event imagery (OSEI), global vegetation index (GVI), coastal sea surface temperature (COASTWATCH), global sea surface temperature (SST), aerosols (AEROSOL), radiation budget (RBPGS), atmospheric moisture and temperature (ATOVS), snow and ice (IMS), and the NIC products.

2.6.2 Modifications

For the IJPS time frame, product processing systems will be modified from the NOAA-KLM era due to instrument changes. The HIRS/3 will be upgraded to HIRS/4, which has a smaller field of view with the same sampling distance. The MHS will replace the AMSU-B. Currently, atmospheric temperature soundings are generated from the ATOVS processing system, while atmospheric moisture soundings are generated from a separate AMSUB system. Work has started to combine these two systems, and during the IJPS era it is expected that the MHS atmospheric moisture sounding products will be generated from ATOVS. In addition, the OCNMAP processing system, which is currently used to generate coastal sea surface temperature products, will likely be replaced by the CoastWatch AVHRR processing system.

Additional modifications to product processing systems will be necessary in order to process the Level 1b data in pipeline mode. During the IJPS era, Metop data will arrive at the ingestor in granules, or small subsets of the orbit. All Level 1b* data from Metop will be processed in pipeline format to allow for the simultaneous processing of each granule in order to meet user timeliness requirements.

2.7 Product Generation & Distribution (PGD) System Interfaces

Figure 2 shows the Product Generation & Distribution (PGD) System interfaces. The PGD will receive Level 1 datasets from the core instruments aboard the NOAA and Metop satellites via the Information/Data Processing System (IPS) element. The PGD will receive Metop unique Level 1 and possibly Level 2 data via the IPS element. The Communications (COMM) infrastructure network provides the PGD system with a connection to external entities. COMM will supply access to required ancillary data, including radiosonde observations and model forecast data from the National Weather Service (NWS).

The PGD system also uses the existing interfaces to distribute products to users. External user interfaces include the Global Telecommunications System (GTS), the NWS Gateway, and the Shared Processing Network (SPN).

The PGD system interfaces with the Archive & Access System (AAS) element for the archiving of Level 2 and 3 products. The AAS consists of the Satellite Active Archive (SAA), the National Climatic Data Center (NCDC) and the National Oceanographic Data Center (NODC).

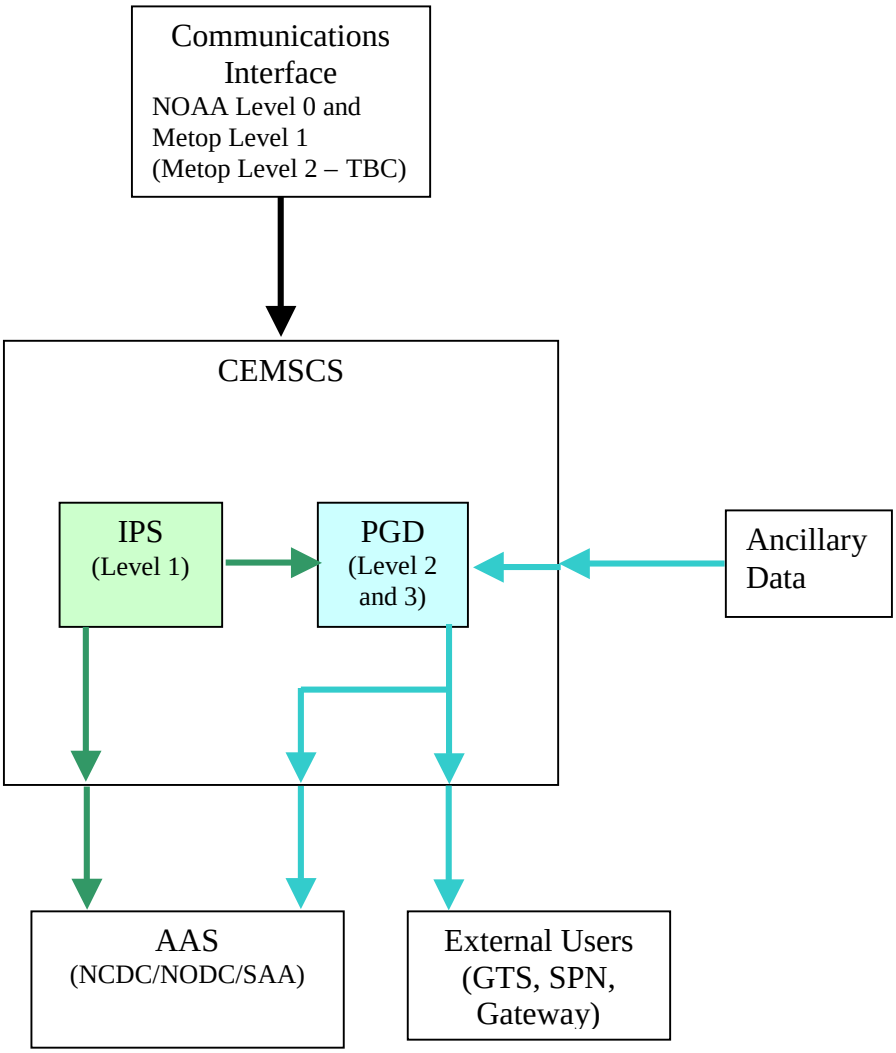

Figure 2. PGD System Interfaces

2.8 Product Processing Phases

Level 2 products in the IJPS era will become operational after the Metop launch with a phased approach. Requirements may be classified as baseline or Day-1 for a group of datasets and products needed for an operational transition from an older spacecraft. Enhancements or Day-2 datasets and products are required after further science validation, system verification development and/or user evaluation. In addition, requirements may be for use in operational systems, be required for demonstration purposes as requirements are further refined, or for research purposes as new applications are developed.

2.8.1 Metop Day-1 Baseline/Operational Requirements

In order for the Metop-1 satellite to replace NOAA-M as the operational morning satellite, the following group of datasets and products are required to be generated, distributed, and archived on an operational basis. Operational products are those that are supported by NESDIS OSDPD 24 hours per day, 7 days per week in accordance with user product formatting, accuracy, and timeliness requirements. Requirements for the Metop baseline category are the continuation of the fulfillment of existing requirements levied on NOAA's polar-orbiting morning satellites. These products will generally be deemed operational as a group on the specific day selected for operational transition from NOAA-M to Metop-1. Table 2-5 lists the Day-1 baseline products and their applications, based on operational requirements.

Table 2-5. Metop Day-1 Baseline/Operational Products

Instrument/Level	Application
AVHRR/3 GAC Level 1	Internal: global imagery, global sea surface temperature, global vegetation index, aerosol, radiation budget, snow/ice, atmospheric soundings, and hazard systems
AVHRR/3 LAC Level 1	Internal: coastal sea surface temperature, snow/ice, significant event, and hazard systems External: DOD, DOA
AVHRR/3 Level 2	Internal: atmospheric soundings
HIRS/4 Level 1	Internal: global sea surface temperature, radiation budget, atmospheric soundings External: NWS/NCEP, ECMWF
HIRS/4 Level 2	Internal: ozone system External: NWS/WFO, DOD, ECMWF, Meteorological agencies
AMSU-A Level 1	Internal: atmospheric temperature soundings, surface and hydrological systems External: NWS/NCEP, ECMWF
AMSU-A Level 2	External: NWS/WFO, DOD
MHS Level 1	Internal: atmospheric soundings, surface and hydrological systems
MHS Level 2	External: NWS/WFO, DOD
SEM Level 1	External: NOAA/SEC

2.8.2 Metop Day-2 Enhancements/Operational Requirements

These requirements are generally new requirements from new data streams aboard Metop-1 that are not required for operational transition. These products will be deemed operational on an individual basis as each meets operational status criteria. However, if any of these products meet operational criteria at the transition to Metop, they may be included in the Day-1 product suite. Table 2-6 lists the Day-2 enhancement products and their applications based on operational requirements.

Table 2-6. Metop Day-2 Enhancements/Operational Products

Instrument/Level	Application
AVHRR FRAC Level 1	Internal: global imagery, global sea surface temperature, global vegetation index, aerosol, radiation budget, snow/ice, atmospheric soundings, and hazard systems
ASCAT Level 1	Internal: ocean surface wind
ASCAT Level 2	External: NWS/NCEP
IASI Level 1C	External: NWS/NCEP
GOME Level 2	External: NWS/NCEP

2.8.3 Metop Day-2 Enhancements/Demonstration Requirements

These requirements are also new requirements from new data streams aboard Metop. They are not required for operational transition. These products will initially be demonstration products with global support, but will not be archived nor have support on a 24 hour per day, 7 day per week basis. Table 2-7 lists the Day-2 enhancement products with demonstration status.

Table 2-7. Metop Day-2 Enhancements/Demonstration Products

Instrument/Level	Application
AVHRR FRAC Level 2	External: NWS
IASI Level 2	External: NWS

2.8.4 Metop Day-2 Enhancements/Research Requirements

These requirements are a result of new data streams aboard Metop. These products are still under development and are a request from the research community. Table 2-8 lists the Day-2 enhancement products with research status.

Table 2-8. Metop Day-2 Enhancements/Research Products

Instrument/Level	Application
GRAS Level 1	Internal: atmospheric soundings
GRAS Level 2	External: NWS
GOME Level 1	Internal: ozone External: NWS

3 Product Generation and Distribution System Requirements for IJPS

This section presents the formal set of system level product generation and distribution requirements for NOAA's processing systems in support of IJPS. These requirements include the modifications to existing processing systems due to upgrades of existing instruments during the IJPS period necessary to continue NOAA's morning and afternoon missions, additional products due to the full resolution AVHRR capability aboard Metop, and additional requirements for derived products from Metop specific instruments.

a) Levels of Requirements

Product Generation and Distribution System requirements are defined for the IJPS era. General requirements are those that apply to all of the product processing systems. In addition, each processing system has a unique set of requirements.

b) Requirement Traceability

Traceability refers to relationship between requirements (parent-child relationship), and between requirements and their verification level. System requirements are allocated to each product processing system for implementation. To facilitate requirement traceability, all requirements are numbered and a Requirement Traceability and Verification Matrix (RTVM) is included as Appendix A of this document.

c) POES Requirement Documentation for IJPS

All Product Generation and Distribution Requirements stated in this document are traceable to statements and/or agreements made in RDN-4.

d) Requirement Identification

Requirements are presented by delineated paragraphs of text, including a requirements header and text paragraphs. Sections may include the following requirement categories:

- **Functional**: Any capabilities the system must have. Input, output, data transforms, calculations, external interfaces, communications, and special management information needs
- **Operational**: Human factors, including human-computer interfaces, system operational environment, system monitoring and configuration control, training, support capabilities, maintenance, logistics, facilities, safety, physical security, implementation sites, and operating/maintenance documentation
- **Performance**: Quantifiable units of how well the system must perform. External workloads, internal function workloads, throughput and response times, data quality, integrity, accuracy, system capacity, reliability, availability, maintainability. Human workload and performance, growth, flexibility, expandability, and fault isolation and location.

- **External and Internal Interfaces**: Unique aspects of the system and how it must interact with other processing systems or other components of the polar ground segment.

The format for requirements identification is as follows:

Requirements ID	**Verification**
Text Paragraph	

The Requirement ID **is defined as follows:**
For **General Requirements**, the requirement ID is in the form:
PGD-<a.b.c>-<number>", followed by text paragraph(s).
Where,
<**a.b.c**> corresponds to the subsection number in which the requirement is contained.
<**number**> is a sequential number for the requirement.

Requirement numbers for each of the processing systems follow the structure of the general requirements. If a requirement number in a particular section is not applicable, then it is labeled as "Reserved."

3.1 General Requirements

These are requirements that apply in general to the Product Generation and Distribution (PGD) systems. The PGD system shall, in progressive phases, reach the capability to provide the following products:

1. Day-one baseline/operational
   - AVHRR/3 Level 2
   - HIRS/4 Level 2
   - MHS Level 2
   - AMSU-A Level 2

2. Day-two enhancements/operational
   - ASCAT Level 2
   - GOME Level 2
   - IASI Level 1C

3. Day-two enhancements/demonstration
   - AVHRR FRAC Level 2
   - IASI Level 2

4. Day-two enhancements/research
   - GRAS Level 2

3.1.1 Functional

PGD-3.1.1-100 Demo
The PGD system shall have the capability to receive Level 1b and Level 1b* datasets from NOAA heritage instruments, AVHRR/3, AMSU-A, and SBUV/2 on NOAA-N and -N' satellites. [AD-1, PGSL-3.2.2.1-010]

PGD-3.1.1-110 Demo
The PGD system shall have the capability to receive Level 1b* datasets from the upgraded HIRS/4 instrument on NOAA-N and -N' satellites. [AD-1, PGSL-3.2.2.1-010]

PGD-3.1.1-120 Demo
The PGD system shall have the capability to receive Level 1b* datasets from the new MHS instrument on NOAA-N and -N' satellites. [AD-1, PGSL-3.2.2.1-010]

PGD-3.1.1-130 Demo
The PGD system shall have the capability to receive full resolution common instrument Level 1b* datasets (AVHRR/3, AMSU-A, HIRS/4, MHS) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [AD-1, PPGD-3.3.4.1-010, PPGD-3.3.4.1-020]

PGD-3.1.1-140 Demo
The PGD system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [AD-1, PPGD-3.3.4.1-010, PPGD-3.3.4.1-020]

PGD-3.1.1-150 Demo
The PGD system shall have the capability to receive Metop instrument Level 1 datasets (ASCAT, IASI (1c), GRAS, GOME) from Metop-1 and -2 satellites. [AD-1, PPGD-3.3.4.1-030]

PGD-3.1.1-160 Demo
The PGD system shall have the capability to receive all Level 1 datasets in granule format from instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [AD-1, PPGD-3.3.4.1-010]

PGD-3.1.1-170 Demo
The PGD system shall have the capability to receive all ancillary data required for generation of Level 2 products. [AD-1, PPGD-3.3.4.1-050]

PGD-3.1.1-180 Demo
The PGD system shall have the capability to receive Metop instrument Level 2 products (ASCAT, IASI, GRAS, GOME) from Metop-1 and -2 satellites. (TBC) [AD-1, PPGD-3.3.4.1-040]

PGD-3.1.1-190
Reserved.

PGD-3.1.1-200 Demo
The PGD system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from common instrument Level 1b* datasets and NOAA's SBUV/2 Level 1b datasets. [AD-1, PPGD-3.3.4.1-060, PPGD-3.3.4.1-080]

PGD-3.1.1-210 Demo
The PGD system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from Metop instrument Level 1 datasets (TBC - if not received from SAFs) [AD-1, PPGD-3.3.4.1-070, PPGD-3.3.4.1-090]

PGD-3.1.1-220 to PGD-3.1.1-290
Reserved.

PGD-3.1.1-300 Demo
The PGD system shall have the capability to distribute common instrument, and NOAA's SBUV/2, Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [AD-1, PPGD-3.3.4.1-100]

PGD-3.1.1-310 Demo
The PGD system shall have the capability to distribute Metop instrument Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [AD-1, PPGD-3.3.4.1-100]

3.1.2 Operational

PGD-3.1.2-100 Demo
The PGD system shall complete the capability to receive all required Level 1b* datasets from common instruments and Level 1b datasets from NOAA's SBUV/2 in accordance with Day-1 and Day-2 progressive product processing phases. [AD-1, PPGD-3.3.4.2-010, PPGD-3.3.4.2-020, PPGD-3.3.4.2-040]

PGD-3.1.2-110 Demo
The PGD system shall complete the capability to receive all required Level 1 datasets from Metop instruments in accordance with Day-1 and Day-2 progressive product processing phases. [AD-1, PPGD-3.3.4.2-010, PPGD-3.3.4.2-020, PPGD-3.3.4.2-040]

PGD-3.1.2-120 Demo
The PGD system shall complete the capability to generate all required Level 2 products from common instruments and NOAA's SBUV/2 in accordance with Day-1 and Day-2 progressive product processing phases. [AD-1, PPGD-3.3.4.2-010, PPGD-3.3.4.2-020, PPGD-3.3.4.2-040]

PGD-3.1.2-130 Demo
The PGD system shall complete the capability to generate all required Level 2 products from Metop instruments in accordance with Day-1 and Day-2 progressive product processing phases. (TBC) [AD-1, PPGD-3.3.4.2-010, PPGD-3.3.4.2-020, PPGD-3.3.4.2-040]

PGD-3.1.2-140 to PGD-3.1.2-190
Reserved.

PGD-3.1.2-200 Demo
The PGD system shall complete the required PGD product systems prior to IJPS ground segment level testing. [AD-1, PPGD-3.3.4.2-010]

PGD-3.1.2-210 to PGD-3.1.2-290
Reserved.

PGD-3.1.2-300 Demo
The PGD system shall initiate the required PGD product systems upon successful completion of NOAA On-Orbit Verification. [AD-1, PPGD-3.3.4.2-010]

PGD-3.1.2-310 Demo
The PGD system shall initiate the required PGD product systems upon successful commissioning of Metop satellites. [AD-1, PPGD-3.3.4.2-010]

PGD-3.1.2-320 to PGD-3.1.2-390
Reserved.

PGD-3.1.2-400 Demo
The PGD system shall continue the receipt of Level 1 datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [AD-1, PPGD-3.3.4.2-010]

PGD-3.1.2-410 to PGD-3.1.2-490
Reserved.

PGD-3.1.2-500 Demo
The PGD element shall monitor the quality and timeliness of received Level 1 data, and generation and delivery of Level 2 and Level 3 products. [AD-1, PPGD-3.3.4.2-020]

PGD-3.1.2-510 to PGD-3.1.2-590
Reserved.

PGD-3.1.2-600 Demo
The PGD element shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [AD-1, PPGD-3.3.4.2-030]

3.1.3 Interface

PGD-3.1.3-100 Demo
The PGD system shall interface with the IPS element for all Level 1b* data input needs from the common instruments and Level 1b datasets from NOAA's SBUV/2 on the NOAA-N and -N' and Metop-1 and -2 satellites. [AD-1, PPGD-3.3.4.3-010]

PGD-3.1.3-110 Demo
The PGD system shall interface with the IPS element for all Level 1 and Level 2 data input (if received from SAFs – TBC) needs from the Metop instruments on the Metop-1 and -2 satellites. [AD-1, PPGD-3.3.4.3-010]

PGD-3.1.3-120 to PGD-3.1.3-190
Reserved.

PGD-3.1.3-200 Demo
The PGD system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for common instrument and NOAA's SBUV/2 Level 2 products. [AD-1, PPGD-3.3.4.3-020, PPGD-3.3.4.3-030]

PGD-3.1.3-210 Demo
The PGD system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for Metop instrument Level 2 and Level 3 products. [AD-1, PPGD-3.3.4.3-020, PPGD-3.3.4.3-030]

3.1.4 Performance

PGD-3.1.4.100 Demo
The PGD system shall receive all required Level 1 granule datasets within 135 minutes of observation. [AD-1, PGSL-3.2.2.1-010]

PGD-3.1.4-110 to PGD-3.1.4-190
Reserved.

PGD-3.1.4-200 Demo
The PGD system shall generate and distribute all required Level 2 and Level 3 products from instruments on NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [AD-1, PGSL-3.2.2.1-010]

PGD-3.1.4-210 Demo
The PGD system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [AD-1, PGSL-3.2.2.1-010]

PGD-3.1.4-220 Demo
The PGD system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from unique instruments on Metop-1 and -2 within 180 minutes of observation. [AD-1, PGSL-3.2.2.1-010]

PGD-3.1.4-220 to PGD-3.1.4-290
Reserved.

PGD-3.1.4-300 Demo
The PGD system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [AD-1, PGSL-3.2.2.1-010]

3.2 AEROSOL

The AEROSOL processing system generates operational products that include aerosol observations and aerosol optical depth.

3.2.1 Functional

AEROSOL-3.2.1-100 Demo
The AEROSOL processing system shall have the capability to receive Level 1b* datasets from the NOAA heritage instrument, AVHRR/3, on NOAA-N and -N' satellites. [PGD-3.1.1-100]

AEROSOL-3.2.1-110 to AEROSOL-3.2.1-120
Reserved.

AEROSOL-3.2.1-130 Demo
The AEROSOL processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130]

AEROSOL-3.2.1-140 Demo
The AEROSOL processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140]

AEROSOL-3.2.1-150
Reserved.

AEROSOL-3.2.1-160 Demo
The AEROSOL processing system shall have the capability to receive all Level 1b* datasets in granule format from AVHRR/3 instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160]

AEROSOL-3.2.1-170 Demo
The AEROSOL processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including land/sea tag. [PGD-3.1.1-170]

AEROSOL-3.2.1-180 to AEROSOL-3.2.1-190
Reserved.

AEROSOL-3.2.1-200 Demo
The AEROSOL processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from NOAA instrument Level 1b* datasets. LIST-CPL [PGD-3.1.1-200]

AEROSOL-3.2.1-210 to AEROSOL-3.2.1-290
Reserved.

AEROSOL-3.2.1-300 Demo
The AEROSOL processing system shall have the capability to distribute NOAA instrument Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.2-300]

3.2.2 Operational

AEROSOL-3.2.2-100 Demo
The AEROSOL processing systems shall complete capability to receive all required Level 1b* datasets from NOAA instruments in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

AEROSOL-3.2.2-110
Reserved.

AEROSOL-3.2.2-120 Demo
The AEROSOL processing systems shall complete capability to generate all required Level 2 products from NOAA instruments in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

AEROSOL-3.2.2-200 Demo
The AEROSOL processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

AEROSOL-3.2.2-210 to AEROSOL-3.2.2-290
Reserved.

AEROSOL-3.2.2-300 Demo
The AEROSOL processing systems shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

AEROSOL-3.2.2-310 Demo
The AEROSOL processing systems shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

AEROSOL-3.2.2-320 to AEROSOL-3.2.2-390
Reserved.

AEROSOL-3.2.2-400 Demo
The AEROSOL processing systems shall continue receipt of Level 1b* datasets and generation of Level 2 and Level 3 aerosol products for the duration of the IJPS period. [PGD-3.1.2-400]

AEROSOL-3.2.2-410 to AEROSOL-3.2.2-490
Reserved.

AEROSOL-3.2.2-500 Demo
The AEROSOL processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 aerosol products. [PGD-3.1.2-500]

AEROSOL-3.2.2-510 to AEROSOL-3.2.2-590
Reserved.

AEROSOL-3.2.2-600 Demo
The AEROSOL processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.2.3 Interface

AEROSOL-3.2.3-100 Demo
The AEROSOL processing system shall interface with the IPS element for all AVHRR/3 Level 1b* data input needs from the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

AEROSOL-3.2.3-110 to AEROSOL-3.2.3-190
Reserved.

AEROSOL-3.2.3-200 Demo
The AEROSOL processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AVHRR/3 Level 2 and Level 3 products. [PGD-3.1.3-200]

3.2.4 Performance

AEROSOL-3.2.4-100 Demo
The AEROSOL processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

AEROSOL-3.2.4-110 to AEROSOL-3.2.4-190
Reserved.

AEROSOL-3.2.4-200 Demo
The AEROSOL processing system shall generate and distribute all required Level 2 and Level 3 products from instruments on NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

AEROSOL-3.2.3-210 Demo
The AEROSOL processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

AEROSOL-3.2.4-220 to AEROSOL-3.2.4-290
Reserved.

AEROSOL-3.2.4-300 Demo
The AEROSOL processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.3 ASCAT

The ASCAT processing system is new because of new capabilities on the Metop satellites. This system will generate operational ocean surface wind speed products. The ASCAT Level 2 products are Day-2 enhancement products, to be deemed operational after the appropriate system development, science validation, system verification, and user evaluation.

3.3.1 Functional

ASCAT-3.3.1-100 to ASCAT-3.3.1-140
Reserved.

ASCAT-3.3.1-150 Demo
The ASCAT processing system shall have the capability to receive Metop instrument Level 1 datasets (ASCAT) from Metop-1 and -2 satellites. [PGD-3.1.1-150]

ASCAT-3.3.1-160 Demo
The ASCAT processing system shall have the capability to receive all Level 1 datasets in granule format from ASCAT instruments on Metop-1 and -2 satellites. [PGD-3.1.1-160]

ASCAT-3.3.1-170 Demo
The ASCAT processing system shall have the capability to receive all ancillary data required for generation of Level 2 products. LIST TBD [PGD-3.1.1-170]

ASCAT-3.3.1-180 Demo
The ASCAT processing system shall have the capability to receive ASCAT Level 2 products from Metop-1 and -2 satellites. (TBC) [PGD-3.1.1-180]

ASCAT-3.3.1-190 to ASCAT-3.3.1-200
Reserved.

ASCAT-3.3.1-210 Demo
The ASCAT processing system shall have the capability to generate, through granule processing, required Level 2 products from ASCAT Level 1 datasets (TBC - if not received from SAFs) [PGD-3.1.1-210]

ASCAT-3.3.1-220 to ASCAT-3.3.1-300
Reserved.

ASCAT-3.3.1-310 Demo
The ASCAT processing system shall have the capability to distribute ASCAT Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-310]

3.3.2 Operational

ASCAT-3.3.2-100
Reserved.

ASCAT-3.3.2-110 Demo
The ASCAT processing system shall complete the capability to receive all required Level 1 datasets from ASCAT in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-110]

ASCAT-3.3.2-120
Reserved.

ASCAT-3.3.2-130 Demo
The ASCAT processing system shall complete the capability to generate all required Level 2 products from ASCAT in accordance with Day-1 and Day-2 progressive product processing phases. (TBC) [PGD-3.1.2-130]

ASCAT-3.3.2-140 to ASCAT-3.3.2-390
Reserved.

ASCAT-3.3.2-400 Demo
The ASCAT processing system shall continue receipt of Level 1 datasets and generation of Level 2 and Level 3 products from the time the system is declared operational and continuing for the duration of the IJPS period. [PGD-3.1.2-400]

ASCAT-3.3.2-410 to ASCAT-3.3.2-490
Reserved.

ASCAT-3.3.2-500 Demo
The ASCAT processing system shall monitor the quality and timeliness of received Level 1 data, and generation and delivery of Level 2 and Level 3 ocean surface wind products. [PGD-3.1.2-500]

ASCAT-3.3.2-510 to ASCAT-3.3.2-590
Reserved.

ASCAT-3.3.2-600 Demo
The ASCAT processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.3.3 Interface

ASCAT-3.3.3-100
Reserved.

ASCAT-3.3.3-110 Demo
The ASCAT processing system shall interface with the IPS element for all Level 1 and Level 2 data (if received from SAFs – TBC) input needs from the ASCAT instrument on the Metop-1 and -2 satellites. [PGD-3.1.3-110]

ASCAT-3.3.3-120 to ASCAT-3.3.3-200
Reserved.

ASCAT-3.3.3-210 Demo
The ASCAT processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for ASCAT Level 2 and Level 3 products. [PGD-3.1.3-210]

3.3.4 Performance

ASCAT-3.3.4-100 Demo
The ASCAT processing system shall receive all required Level 1 granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

ASCAT-3.3.4-110 to ASCAT-3.3.4-210
Reserved.

ASCAT-3.3.4-220 Demo
The ASCAT processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from unique instruments on Metop-1 and -2 within 180 minutes of observation. [PGD-3.1.4-220]

ASCAT-3.3.4-210 to ASCAT-3.3.4-290
Reserved.

ASCAT-3.3.4-300 Demo
The ASCAT processing system shall generate all required Level 2 and Level 3 products comparable to quality and resolution attributes of the QuikSCAT products provided in the NESDIS CPL in Appendix C. [PGD-3.1.4-300]

3.4 ATOVS

The ATOVS processing system generates operational sounding products that include atmospheric temperature profiles and total ozone. Currently ATOVS and AMSUB, the atmospheric moisture sounding system, run separately, however work has been started to combine the two systems. It is expected that in the IJPS era, the MHS atmospheric moisture products will be part of the ATOVS system.

3.4.1 Functional

ATOVS-3.4.1-100 Demo
The ATOVS processing system shall have the capability to receive Level 1b* datasets from the NOAA heritage instruments, AVHRR/3 and AMSU-A, on NOAA-N and -N' satellites. [PGD-3.1.1-100]

ATOVS-3.4.1-110 Demo
The ATOVS processing system shall have the capability to receive Level 1b* datasets from the upgraded HIRS/4 instrument on NOAA-N and -N' satellites. [PGD-3.1.1-110]

ATOVS-3.4.1-120 Demo
The ATOVS processing system shall have the capability to receive Level 1b* datasets from the new MHS instrument on NOAA-N and -N' satellites. (TBD) [PGD-3.1.1-120]

ATOVS-3.4.1-130 Demo
The ATOVS processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3, AMSU-A, HIRS/4, MHS-TBC) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130]

ATOVS-3.4.1-140 Demo
The ATOVS processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140]

ATOVS-3.4.1-150
Reserved.

ATOVS-3.4.1-160 Demo
The ATOVS processing system shall have the capability to receive all Level 1b* datasets in granule format from the AMSU-A, AVHRR/3, HIRS/4, and MHS (TBD) instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160]

ATOVS-3.4.1-170 Demo
The ATOVS processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including sea surface temperature, NWS forecast model data, terrain file, and radiosonde data. [PGD-3.1.1-170; AD-2, 5.1-5.4]

ATOVS-3.4.1-180 to ATOVS-3.4.1-190
Reserved.

ATOVS-3.4.1-200 Demo
The ATOVS processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from NOAA instrument Level 1b* datasets. LIST-CPL [PGD-3.1.1-200; AD-2, 5.5-5.6]

ATOVS-3.4.1-210 to ATOVS-3.4.1-290
Reserved.

ATOVS-3.4.1-300 Demo
The ATOVS processing system shall have the capability to distribute AMSU-A, HIRS/4, and MHS (TBD) Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300; AD-2, 5.9, 5.15, 5.17]

3.4.2 Operational

ATOVS-3.4.2-100 Demo
The ATOVS processing system shall complete the capability to receive all required Level 1b* datasets from AMSU-A, AVHRR/3, HIRS/4, and MHS (TBD) in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

ATOVS-3.4.2-110
Reserved.

ATOVS-3.4.2-120 Demo
The ATOVS processing system shall complete the capability to generate all required Level 2 products from AMSU-A, AVHRR/3, HIRS/4, and MHS in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

ATOVS-3.4.2-130 to ATOVS-3.4.2-190
Reserved.

ATOVS-3.4.2-200 Demo
The ATOVS processing system shall complete required PGD product systems prior to IJPS ground segment level testing. [PGD-3.1.2-200]

ATOVS-3.4.2-210 to ATOVS-3.4.2-290
Reserved.

ATOVS-3.4.2-300 Demo
The ATOVS processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

ATOVS-3.4.2-310 Demo
The ATOVS processing system shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

ATOVS-3.4.2-320 to ATOVS-3.4.2-390
Reserved.

ATOVS-3.4.2-400 Demo
The ATOVS processing system shall continue receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

ATOVS-3.4.2-410 to ATOVS-3.4.2-490
Reserved.

ATOVS-3.4.2-500 Demo
The ATOVS processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 atmospheric temperature and moisture products. [PGD-3.1.2-500]

ATOVS-3.4.2-510 to ATOVS-3.4.2-590
Reserved.

ATOVS-3.4.2-600 Demo
The ATOVS processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.4.3 Interface

ATOVS-3.4.3-100 Demo
The ATOVS processing system shall interface with the IPS element for all Level 1b* data input needs from the AMSU-A, AVHRR/3, HIRS/4, and MHS (TBD) on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

ATOVS-3.4.3-110 to ATOVS-3.4.3-190
Reserved.

ATOVS-3.4.3-200 Demo
The ATOVS processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AMSU-A, HIRS/4, and MHS (TBD) Level 2 and Level 3 products. [PGD-3.1.3-200]

ATOVS-3.4.3-210 to ATOVS-3.4.3-290
Reserved.

ATOVS-3.4.3-300 Demo
The ATOVS processing system shall interface with OOPS to provide meteorological data files for ozone processing. [AD-2, 5.14]

3.4.4 Performance

ATOVS-3.4.4-100 Demo
The ATOVS processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

ATOVS-3.4.4-110 to ATOVS-3.4.4-190
Reserved.

ATOVS-3.4.4-200 Demo
The ATOVS processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

ATOVS-3.4.4-210 Demo
The ATOVS processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

ATOVS-3.4.4-220 to ATOVS-3.4.4-290
Reserved.

ATOVS-3.4.4-300 Demo
The ATOVS processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.5 GRAS

The GRAS Level 2 products are Day-2 enhancements for research mode and are not required for operational transition. Requirements are TBD.

3.6 GVI

The GVI processing system generates operational products that include Normalized Difference Vegetation Index (NDVI) and vegetation fraction.

3.6.1 Functional

GVI-3.6.1-100 Demo
The GVI processing system shall have the capability to receive Level 1b* datasets from NOAA heritage instruments, AVHRR/3, on NOAA-N and -N' satellites. [PGD-3.1.1-100; AD-2, 8.3]

GVI-3.6.1-110 to GVI-3.6.1-120
Reserved.

GVI-3.6.1-130 Demo
The GVI processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. (TBC) [PGD-3.1.1-130; AD-2, 8.3]

GVI-3.6.1-140 Demo
The GVI processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140; AD-2, 8.3]

GVI-3.6.1-150
Reserved.

GVI-3.6.1-160 Demo
The GVI processing system shall have the capability to receive all Level 1b* datasets in granule format from AVHRR/3 on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160; AD-2, 8.3]

GVI-3.6.1-170 Demo
The GVI processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including satellite zenith angle, solar zenith angle, day of observation, mapped AVHRR channel 1 file, mapped AVHRR channel 2 file, NOBS file, PWI file, scan angles, vegetation index documentation file, vegetation index DVI file, vegetation index NDVI file, and vegetation index quality cloud file. [PGD-3.1.1-170; RD-2, section 4, 5]

GVI-3.6.1-180 to GVI-3.6.1-190
Reserved.

GVI-3.6.1-200 Demo
The GVI processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from AVHRR/3 Level 1b* datasets. LIST-CPL [PGD-3.1.1-200; AD-2, 8.8]

GVI-3.6.1-210 to GVI-3.6.1-290
Reserved.

GVI-3.6.1-300 Demo
The GVI processing system shall have the capability to distribute AVHRR/3 Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300; AD-2, 8.1]

3.6.2 Operational

GVI-3.6.2-100 Demo
The GVI processing system shall complete capability to receive all required Level 1b* datasets from AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

GVI-3.6.2-110
Reserved.

GVI-3.6.2-120 Demo
The GVI processing system shall complete capability to generate all required Level 2 products from AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

GVI-3.6.2-130 to GVI-3.6.2-190
Reserved.

GVI-3.6.2-200 Demo
The GVI processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

GVI-3.6.2-210 to GVI-3.6.2-290
Reserved.

GVI-3.6.2-300 Demo
The GVI processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

GVI-3.6.2-310 Demo
The GVI processing system shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

GVI-3.6.2-320 to GVI-3.6.2-390
Reserved.

GVI-3.6.2-400 Demo
The GVI processing system shall continue receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

GVI-3.6.2-410 to GVI-3.6.2-490
Reserved.

GVI-3.6.2-500 Demo
The GVI processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

GVI-3.6.2-510 to GVI-3.6.2-590
Reserved.

GVI-3.6.2-600 Demo
The GVI processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.6.3 Interface

GVI-3.6.3-100 Demo
The GVI processing system shall interface with the IPS element for all Level 1b* data input needs from the AVHRR/3 on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

GVI-3.6.3-110 to GVI-3.6.3-190
Reserved.

GVI-3.6.3-200 Demo
The GVI processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AVHRR/3 Level 2 and Level 3 products. [PGD-3.1.3-200]

3.6.4 Performance

GVI-3.6.4-100 Demo
The GVI processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

GVI-3.6.4-110 to GVI-3.6.4-190
Reserved.

GVI-3.6.4-200 Demo
The GVI processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

GVI-3.6.4-210 Demo
The GVI processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

GVI-3.6.4-220 to GVI-3.6.4-290
Reserved.

GVI-3.6.3-300 Demo
The GVI processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.7 IASI

The IASI Level 2 products are Day-2 enhancements for demonstration mode and are not required for operational transition. Requirements are TBD.

3.8 IMAGES

The IMAGES processing system generates operational products that include global infrared and visible cloud imagery.

3.8.1 Functional

IMAGES-3.8.1-100 Demo
The IMAGES processing system shall have the capability to receive Level 1b* datasets from NOAA heritage instruments, AVHRR/3, on NOAA-N and -N' satellites. [PGD-3.1.1-100; AD-2, 8.3]

IMAGES-3.8.1-110 to IMAGES-3.8.1-120
Reserved.

IMAGES-3.8.1-130 Demo
The IMAGES processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130; AD-2, 8.3]

IMAGES-3.8.1-140 Demo
The IMAGES processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140; AD-2, 8.3]

IMAGES-3.8.1-150
Reserved.

IMAGES-3.8.1-160 Demo
The IMAGES processing system shall have the capability to receive all Level 1b* datasets in granule format from AVHRR/3 instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160; AD-2, 8.3]

IMAGES-3.8.1-170 Demo
The IMAGES processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including GAC oceanic imagery, geopolitical boundaries database, grid and coastline database, and land/sea tag. [PGD-3.1.1-170]

IMAGES-3.8.1-180 to IMAGES-3.8.1-190
Reserved.

IMAGES-3.8.1-200 Demo
The IMAGES processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from AVHRR/3 Level 1b* datasets. LIST-CPL [PGD-3.1.1-200; AD-2, 8.5]

IMAGES-3.8.1-210 to IMAGES-3.8.1-290
Reserved.

IMAGES-3.8.1-300 Demo
The IMAGES processing system shall have the capability to distribute AVHRR/3 Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300; AD-2, 8.1]

3.8.2 Operational

IMAGES-3.8.2-100 Demo
The IMAGES processing system shall complete the capability to receive all required Level 1b* datasets from the AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

IMAGES-3.8.2-110
Reserved.

IMAGES-3.8.2-120 Demo
The IMAGES processing system shall complete the capability to generate all required Level 2 products from the AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

IMAGES-3.8.2-130 to IMAGES-3.8.2-190
Reserved.

IMAGES-3.8.2-200 Demo
The IMAGES processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

IMAGES-3.8.2-210 to IMAGES-3.8.2-290
Reserved.

IMAGES-3.8.2-300 Demo
The IMAGES processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

IMAGES-3.8.2-310 Demo
The IMAGES processing system shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

IMAGES-3.8.2-320 to IMAGES-3.8.2-390
Reserved.

IMAGES-3.8.2-400 Demo
The IMAGES processing system shall continue the receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

IMAGES-3.8.2-410 to IMAGES-3.8.2-490
Reserved.

IMAGES-3.8.2-500 Demo
The IMAGES processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

IMAGES-3.8.2-510 to IMAGES-3.8.2-590
Reserved.

IMAGES-3.8.2-600 Demo
The IMAGES processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.8.3 Interface

IMAGES-3.8.3-100 Demo
The IMAGES processing system shall interface with the IPS element for all Level 1b* data input needs from the AVHRR/3 on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

IMAGES-3.8.3-110 to IMAGES-3.8.3-190
Reserved.

IMAGES-3.8.3-200 Demo
The IMAGES processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AVHRR/3 Level 2 and Level 3 products. [PGD-3.1.3-200]

3.8.4 Performance

IMAGES-3.8.4-100 Demo
The IMAGES processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

IMAGES-3.8.4-110 to IMAGES-3.8.4-190
Reserved.

IMAGES-3.8.4-200 Demo
The IMAGES processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

IMAGES-3.8.4-210 Demo
The IMAGES processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

IMAGES-3.8.4-220 to IMAGES-3.8.4-290
Reserved.

IMAGES-3.8.4-300 Demo
The IMAGES processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.9 IMS

The IMS processing system generates operational products including snow cover analyses. In addition to the following requirements for product generation and distribution from NOAA and Metop, the IMS system also uses imagery data from the geostationary satellites GOES, GMS, and Meteosat, as well as snow and ice data from the DMSP SSM/I.

3.9.1 Functional

IMS-3.9.1-100 Demo
The IMS processing system shall have the capability to receive Level 1b* datasets from NOAA heritage instruments, AVHRR/3, on NOAA-N and -N' satellites. [PGD-3.1.1-100]

IMS-3.9.1-110 to IMS-3.9.1-120
Reserved.

IMS-3.9.1-130 Demo
The IMS processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130]

IMS-3.9.1-140 Demo
The IMS processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140]

IMS-3.9.1-150
Reserved.

IMS-3.9.1-160 Demo
The IMS processing system shall have the capability to receive all Level 1b* datasets in granule format from AVHRR/3 instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160]

IMS-3.9.1-170 Demo
The IMS processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including Air Force daily snow analysis, MSPPS AMSU snow/ice cover map, elevation contour data, coastline and river data, Family of Services observation, geopolitical boundaries database, latitude/longitude grid database, the NOAA Ice Center analysis, NOHRSC CONUS daily snow cover maps, surface observations, and vegetation type. [PGD-3.1.1-170; RD-1, section 9.6]

IMS-3.9.1-180 to IMS-3.9.1-190
Reserved.

IMS-3.9.1-200 Demo
The IMS processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from NOAA instrument Level 1b* datasets. LIST-CPL [PGD-3.1.1-200]

IMS-3.9.1-210 to IMS-3.9.1-290
Reserved.

IMS-3.9.1-300 Demo
The IMS processing system shall have the capability to distribute AVHRR/3 Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300]

3.9.2 Operational

IMS-3.9.2-100 Demo
The IMS processing system shall complete the capability to receive all required Level 1b* datasets from AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

IMS-3.9.2-110
Reserved.

IMS-3.9.2-120 Demo
The IMS processing system shall complete the capability to generate all required Level 2 products from AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

IMS-3.9.2-130 to IMS-3.9.2-190
Reserved.

IMS-3.9.2-200 Demo
The IMS processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

IMS-3.9.2-210 to IMS-3.9.2-290
Reserved.

IMS-3.9.2-300 Demo
The IMS processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

IMS-3.9.2-310 Demo
The IMS processing system shall initiate required PGD product systems upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

IMS-3.9.2-320 to IMS-3.9.2-390
Reserved.

IMS-3.9.2-400 Demo
The IMS processing system shall continue receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

IMS-3.9.2-410 to IMS-3.9.2-490
Reserved.

IMS-3.9.2-500 Demo
The IMS processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

IMS-3.9.2-510 to IMS-3.9.2-590
Reserved.

IMS-3.9.2-600 Demo
The IMS processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.9.3 Interface

IMS-3.9.3-100 Demo
The IMS processing system shall interface with the IPS element for all Level 1b* data input needs from the AVHRR/3 on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

IMS-3.9.3-110 to IMS-3.9.3-190
Reserved.

IMS-3.9.3-200 Demo
The IMS processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AVHRR/3 Level 2 and Level 3 products. [PGD-3.1.3-200]

IMS-3.9.3-210 to IMS-3.9.3-290
Reserved.

IMS-3.9.3-300 Demo
The IMS process system shall interface with MSPPS for the reception of AMSU snow and ice data.

IMS-3.9.3-310 to IMS-3.9.3-390
Reserved.

3.9.4 Performance

IMS-3.9.4-100 Demo
The IMS processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

IMS-3.9.4-110 to IMS-3.9.4-190
Reserved.

IMS-3.9.4-200 Demo
The IMS processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

IMS-3.9.4-210 Demo
The IMS processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

IMS-3.9.4-220 to IMS-3.9.4-290
Reserved.

IMS-3.9.4-300 Demo
The IMS processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.10 MSPPS

The MSPPS processing system generates operational products including cloud liquid water, total precipitable water, and rain rate.

3.10.1 Functional

MSPPS-3.10.1-100 Demo
The MSPPS processing system shall have the capability to receive Level 1b* datasets from NOAA heritage instruments, AMSU-A on NOAA-N and -N' satellites. [PGD-3.1.1-100; AD-2, 8.6]

MSPPS-3.10.1-110
Reserved.

MSPPS-3.10.1-120 Demo
The MSPPS processing system shall have the capability to receive Level 1b* datasets from the new MHS instrument on NOAA-N and -N' satellites. [PGD-3.1.1-120]

MSPPS-3.10.1-130 Demo
The MSPPS processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AMSU-A, MHS) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130; AD-2, 8.6]

MSPPS-3.10.1-140 to MSPPS-3.10.1-150
Reserved.

MSPPS-3.10.1-160 Demo
The MSPPS processing system shall have the capability to receive all Level 1b* datasets in granule format from AMSU-A and MHS instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160; AD-2, 8.6]

MSPPS-3.10.1-170 Demo
The MSPPS processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including SSM/I brightness temperatures, SSM/I derived products, terrain file, AMSU-A asymmetry correction table, land/sea tag, and SSM/I climatological datasets. [PGD-3.1.1-170]

MSPPS-3.10.1-180 to MSPPS-3.10.1-190
Reserved.

MSPPS-3.10.1-200 Demo
The MSPPS processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from AMSU-A and MHS Level 1b* datasets. LIST-CPL [PGD-3.1.1-200; AD-2, 8.7]

MSPPS-3.10.1-210 to MSPPS-3.10.1-290
Reserved.

MSPPS-3.10.1-300 Demo
The MSPPS processing system shall have the capability to distribute AMSU-A and MHS Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300; AD-2, 8.1]

3.10.2 Operational

MSPPS-3.10.2-100 Demo
The MSPPS processing system shall complete the capability to receive all required Level 1b* datasets from AMSU-A and MHS in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

MSPPS-3.10.2-110
Reserved.

MSPPS-3.10.2-120 Demo
The MSPPS processing system shall complete the capability to generate all required Level 2 products from AMSU-A and MHS in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

MSPPS-3.10.2-130 to MSPPS-3.10.2-190
Reserved.

MSPPS-3.10.2-200 Demo
The MSPPS processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

MSPPS-3.10.2-210 to MSPPS-3.10.2-290
Reserved.

MSPPS-3.10.2-300 Demo
The MSPPS processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

MSPPS-3.10.2-310 Demo
The MSPPS processing system shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

MSPPS-3.10.2-320 to MSPPS-3.10.2-390
Reserved.

MSPPS-3.10.2-400 Demo
The MSPPS processing system shall continue receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

MSPPS-3.10.2-410 to MSPPS-3.10.2-490
Reserved.

MSPPS-3.10.2-500 Demo
The MSPPS processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

MSPPS-3.10.2-510 to MSPPS-3.10.2-590
Reserved.

MSPPS-3.10.2-600 Demo
The MSPPS processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.10.3 Interface

MSPPS-3.10.3-100 Demo
The MSPPS processing system shall interface with the IPS element for all Level 1b* data input needs from the AMSU-A and MHS on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

MSPPS-3.10.3-110 to MSPPS-3.10.3-190
Reserved.

MSPPS-3.10.3-200 Demo
The MSPPS processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AMSU-A and MHS Level 2 and Level 3 products. [PGD-3.1.3-200]

MSPPS-3.10.3-210 to MSPPS-3.10.3-290
Reserved.

MSPPS-3.10.3-300 Demo
The MSPPS processing system shall interface with IMS to provide AMSU snow and ice data.

3.10.4 Performance

MSPPS-3.10.4-100 Demo
The MSPPS processing system shall receive all required Level 1b* granule-datasets within 135 minutes of observation. [PGD-3.1.4-100]

MSPPS-3.10.4-110 to MSPPS-3.10.4-190
Reserved.

MSPPS-3.10.4-200 Demo
The MSPPS processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

MSPPS-3.10.4-210 Demo
The MSPPS processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

MSPPS-3.10.4-220 to MSPPS-3.10.4-290
Reserved.

MSPPS-3.10.4-300 Demo
The MSPPS processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.11 CoastWatch AVHRR processing system

The CoastWatch AVHRR processing system generates the operational CoastWatch suite of products. Currently this system is known as OCNMAP, but this will likely change before the IJPS era.

3.11.1 Functional

CWPS-3.11.1-100 Demo
The CoastWatch AVHRR processing system shall have the capability to receive Level 1b* datasets from NOAA heritage instruments, AVHRR/3, on NOAA-N and -N' satellites. [PGD-3.1.1-100]

CWPS-3.11.1-110 to CWPS-3.11.1-120
Reserved.

CWPS-3.11.1-130 Demo
The CoastWatch AVHRR processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130]

CWPS-3.11.1-140 Demo
The CoastWatch AVHRR processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140]

CWPS-3.11.1-150
Reserved.

CWPS-3.11.1-160 Demo
The CoastWatch AVHRR processing system shall have the capability to receive all Level 1b* datasets in granule format from AVHRR/3 instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160]

CWPS-3.11.1-170 Demo
The CoastWatch AVHRR processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including albedo, azimuth angle, brightness temperatures, cloud masks, ocean reflectance, satellite zenith angle, scan angle, solar zenith angle, and validation database. [PGD-3.1.1-170]

CWPS-3.11.1-180 to CWPS-3.11.1-190
Reserved.

CWPS-3.11.1-200 Demo
The CoastWatch AVHRR processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from AVHRR/3 Level 1b* datasets. LIST-CPL [PGD-3.1.1-200]

CWPS-3.11.1-210 to CWPS-3.11.1-290
Reserved.

CWPS-3.11.1-300 Demo
The CoastWatch AVHRR processing system shall have the capability to distribute AVHRR/3 Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300]

3.11.2 Operational

CWPS-3.11.2-100 Demo
The CoastWatch AVHRR processing system shall complete the capability to receive all required Level 1b* datasets from the AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

CWPS-3.11.2-110
Reserved.

CWPS-3.11.2-120 Demo
The CoastWatch AVHRR processing system shall complete the capability to generate all required Level 2 products from the AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

CWPS-3.11.2-130 to CWPS-3.11.2-190
Reserved.

CWPS-3.11.2-200 Demo
The CoastWatch AVHRR processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

CWPS-3.11.2-210 to CWPS-3.11.2-290
Reserved.

CWPS-3.11.2-300 Demo
The CoastWatch AVHRR processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

CWPS-3.11.2-310 Demo
The CoastWatch AVHRR processing system shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

CWPS-3.11.2-320 to CWPS-3.11.2-390
Reserved.

CWPS-3.11.2-400 Demo
The CoastWatch AVHRR processing system shall continue receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

CWPS-3.11.2-410 to CWPS-3.11.2-490
Reserved.

CWPS-3.11.2-500 Demo
The CoastWatch AVHRR processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

CWPS-3.11.2-510 to CWPS-3.11.2-590
Reserved.

CWPS-3.11.2-600 Demo
The CoastWatch AVHRR processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.11.3 Interface

CWPS-3.11.3-100 Demo
The CoastWatch AVHRR processing system shall interface with the IPS element for all Level 1b* data input needs from the AVHRR/3 on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

CWPS-3.11.3-110 to CWPS-3.11.3-190
Reserved.

CWPS-3.11.3-200 Demo
The CoastWatch AVHRR processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AVHRR/3 Level 2 and Level 3 products. [PGD-3.1.3-200]

3.11.4 Performance

CWPS-3.11.4-100 Demo
The CoastWatch AVHRR processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

CWPS-3.11.4-110 to CWPS-3.11.4-190
Reserved.

CWPS-3.11.4-200 Demo
The CoastWatch AVHRR processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

CWPS-3.11.4-210 Demo
The CoastWatch AVHRR processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

CWPS-3.11.4-220 to CWPS-3.11.4-290
Reserved.

CWPS-3.11.4-300 Demo
The CoastWatch AVHRR processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.12 OOPS

The OOPS processing system generates operational products that include total ozone and ozone profiles. The GOME Level 2 products are Day-2 enhancement products, to be deemed operational after the appropriate system development, science validation, system verification, and user evaluation.

3.12.1 Functional

OOPS-3.12.1-100 Demo
The OOPS processing system shall have the capability to receive Level 1b datasets from NOAA heritage instruments, SBUV/2 on NOAA-N and -N' satellites. [PGD-3.1.1-100]

OOPS-3.12.1-110 to OOPS-3.12.1-140
Reserved.

OOPS-3.12.1-150 Demo
The OOPS processing system shall have the capability to receive Metop instrument Level 1 datasets (GOME) from Metop-1 and -2 satellites. (TBC) [PGD-3.1.1-150]

OOPS-3.12.1-160 Demo
The OOPS processing system shall have the capability to receive all Level 1b datasets from SBUV/2 on NOAA-N and -N' and all Level 1 datasets in granule format from GOME instruments on Metop-1 and -2 satellites. [PGD-3.1.1-160]

OOPS-3.12.1-170 Demo
The OOPS processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including ATOVS meteorological data files (cloud amounts, cloud top temperatures, and vertical profiles of atmospheric temperatures), solar zenith angle, multiple scattering correction lookup table, ozone absorption coefficients, Rayleigh scattering coefficients, prelaunch calibration coefficient data set, snow and ice data, surface pressure file, surface reflectivity, total ozone lookup table, instrument calibration and albedo correction data sets, daily intermediate data set, daily meteorology and geographic data set, spectral information data set, bass coefficients data set, absorption coefficients data set, a priori profiling data set, day 1 solar flux data set, interrange ratios data set, and albedo correction factor data set. [NOAA-KLM User Guide, section 9.7] [PGD-3.1.1-170; AD-2, 7.1-7.4]

OOPS-3.12.1-180 Demo
The OOPS processing system shall have the capability to receive Metop instrument Level 2 products (GOME) from Metop-1 and -2 satellites. (TBC) [PGD-3.1.1-180]

OOPS-3.12.1-190
Reserved.

OOPS-3.12.1-200 Demo
The OOPS processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from SBUV/2 Level 1b datasets. LIST-CPL [PGD-3.1.1-200]

OOPS-3.12.1-210 Demo
The OOPS processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from GOME Level 1 datasets (TBC - if not received from SAFs) [PGD-3.1.1-210]

OOPS-3.12.1-220 to OOPS-3.12.1-290
Reserved.

OOPS-3.12.1-300 Demo
The OOPS processing system shall have the capability to distribute SBUV/2 Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300] [FASR-7.5]

OOPS-3.12.1-310 Demo
The OOPS processing system shall have the capability to distribute GOME Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-310]

3.12.2 Operational

OOPS-3.12.2-100 Demo
The OOPS processing shall complete the capability to receive all required Level 1b datasets from SBUV/2 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

OOPS-3.12.2-110 Demo
The OOPS processing system shall complete the capability to receive all required Level 1 datasets from GOME in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-110]

OOPS-3.12.2-120 Demo
The OOPS processing system shall complete the capability to generate all required Level 2 products from SBUV/2 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

OOPS-3.12.2-130 Demo
The OOPS processing system shall complete the capability to generate all required Level 2 products from GOME in accordance with Day-1 and Day-2 progressive product processing phases. (TBC) [PGD-3.1.2-130]

OOPS-3.12.2-140 to OOPS-3.12.2-190
Reserved.

OOPS-3.12.2-200 Demo
The OOPS processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

OOPS-3.12.2-210 to OOPS-3.12.2-290
Reserved.

OOPS-3.12.2-300 Demo
The OOPS processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

OOPS-3.12.2-310 to OOPS-3.12.2-390
Reserved.

OOPS-3.12.2-400 Demo
The OOPS processing system shall continue the receipt of Level 1 datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

OOPS-3.12.2-410 to OOPS-3.12.2-490
Reserved.

OOPS-3.12.2-500 Demo
The OOPS processing system shall monitor the quality and timeliness of received Level 1 data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

OOPS-3.12.2-510 to OOPS-3.12.2-590
Reserved.

OOPS-3.12.2-600 Demo
The OOPS processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.12.3 Interface

OOPS-3.12.3-100 Demo
The OOPS processing system shall interface with the IPS element for all Level 1b data input needs from the SBUV/2 on the NOAA-N and -N' satellites. [PGD-3.1.3-100]

OOPS-3.12.3-110 Demo
The OOPS processing system shall interface with the IPS element for all Level 1 and Level 2 data input needs (if received from SAFs – TBC) from the GOME on the Metop-1 and -2 satellites. (TBC) [PGD-3.1.3-110]

OOPS-3.12.3-120 to OOPS-3.12.3-190
Reserved.

OOPS-3.12.3-200 Demo
The OOPS processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for SBUV/2 Level 2 and Level 3 products. [PGD-3.1.3-200]

OOPS-3.12.3-210 Demo
The OOPS processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for GOME Level 2 and Level 3 products. [PGD-3.1.3-210]

OOPS-3.12.3-220 to OOPS-3.12.3-290
Reserved.

OOPS-3.12.3-300 Demo
The OOPS processing system shall interface with ATOVS for the reception of meteorological data files. [AD-2, 7.4]

3.12.4 Performance

OOPS-3.12.4-100 Demo
The OOPS processing system shall receive all required Level 1 granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

OOPS-3.12.4-110 to OOPS-3.12.4-190
Reserved.

OOPS-3.12.4-200 Demo
The OOPS processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

OOPS-3.12.4-210
Reserved.

OOPS-3.12.4-220 Demo
The OOPS processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from GOME comparable to quality and resolution attributes of the OOPS ozone products provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-220]

OOPS-3.12.4-230 to OOPS-3.12.4-290
Reserved.

OOPS-3.12.4-300 Demo
The OOPS processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.13 OSEI

The OSEI processing system generates operational significant event products. These products are produced on an as-needed basis during hazard events such as fires, tropical storms, dust storms, floods, severe weather, and volcanoes. Significant event imagery is also produced from the geostationary GOES, GMS, and Meteosat, as well as from DMSP's SSM/I and from TOMS-EP.

3.13.1 Functional

OSEI-3.13.1-100 Demo
The OSEI processing system shall have the capability to receive Level 1b* datasets from NOAA heritage instruments, AVHRR/3, on NOAA-N and -N' satellites. [PGD-3.1.1-100]

OSEI-3.13.1-110 to OSEI-3.13.1-120
Reserved.

OSEI-3.13.1-130 Demo
The OSEI processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130]

OSEI-3.13.1-140 Demo
The OSEI processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140]

OSEI-3.13.1-150
Reserved.

OSEI-3.13.1-160 Demo
The OSEI processing system shall have the capability to receive all Level 1b* datasets in granule format from AVHRR/3 instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160]

OSEI-3.13.1-170 Demo
The OSEI processing system shall have the capability to receive all ancillary data required for generation of Level 2 products. [PGD-3.1.1-170]

OSEI-3.13.1-180 to OSEI-3.13.1-190
Reserved.

OSEI-3.13.1-200 Demo
The OSEI processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from AVHRR/3 Level 1b* datasets. LIST-CPL [PGD-3.1.1-200]

OSEI-3.13.1-210 to OSEI-3.13.1-290
Reserved.

OSEI-3.13.1-300 Demo
The OSEI processing system shall have the capability to distribute AVHRR/3 Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300]

3.13.2 Operational

OSEI-3.13.2-100 Demo
The OSEI processing system shall complete the capability to receive all required Level 1b* datasets from AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

OSEI-3.13.2-110
Reserved.

OSEI-3.13.2-120 Demo
The OSEI processing system shall complete the capability to generate all required Level 2 products from AVHRR/3 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

OSEI-3.13.2-130 to OSEI-3.13.2-190
Reserved.

OSEI-3.13.2-200 Demo
The OSEI processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

OSEI-3.13.2-210 to OSEI-3.13.2-290
Reserved.

OSEI-3.13.2-300 Demo
The OSEI processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

OSEI-3.13.2-310 Demo
The OSEI processing system shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

OSEI-3.13.2-320 to OSEI-3.13.2-390
Reserved.

OSEI-3.13.2-400 Demo
The OSEI processing system shall continue the receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

OSEI-3.13.2-410 to OSEI-3.13.2-490
Reserved.

OSEI-3.13.2-500 Demo
The OSEI processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

OSEI-3.13.2-510 to OSEI-3.13.2-590
Reserved.

OSEI-3.13.2-600 Demo
The OSEI processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.13.3 Interface

OSEI-3.13.3-100 Demo
The OSEI processing system shall interface with IPS element for all Level 1b* data input needs from the AVHRR/3 on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

OSEI-3.13.3-110 to OSEI-3.13.3-190
Reserved.

OSEI-3.13.3-200 Demo
The OSEI processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AVHRR/3 Level 2 and Level 3 products. [PGD-3.1.3-200]

3.13.4 Performance

OSEI-3.13.4-100 Demo
The OSEI processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

OSEI-3.13.4-110 to OSEI-3.13.4-190
Reserved.

OSEI-3.13.4-200 Demo
The OSEI processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

OSEI-3.13.4-210 Demo
The OSEI processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

OSEI-3.13.4-220 to OSEI-3.13.4-290
Reserved.

OSEI-3.13.4-300 Demo
The OSEI processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

3.14 RBPGS

The RBPGS processing system generates operational radiation budget products that include outgoing longwave radiation and absorbed shortwave radiation.

3.14.1 Functional

RBPGS-3.14.1-100 Demo
The RBPGS processing system shall have the capability to receive Level 1b* datasets from NOAA heritage instruments, AVHRR/3, on NOAA-N and -N' satellites. [PGD-3.1.1-100]

RBPGS-3.14.1-110 Demo
The RBPGS processing system shall have the capability to receive Level 1b* datasets from the upgraded HIRS/4 instrument on NOAA-N and -N' satellites. [PGD-3.1.1-110]

RBPGS-3.14-1-120
Reserved.

RBPGS-3.14.1-130 Demo
The RBPGS processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3, HIRS/4) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130]

RBPGS-3.14.1-140 Demo
The RBPGS processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140]

RBPGS-3.14-1-150
Reserved.

RBPGS-3.14.1-160 Demo
The RBPGS processing system shall have the capability to receive all Level 1b* datasets in granule format from AVHRR/3 and HIRS/4 instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160]

RBPGS-3.14.1-170 Demo
The RBPGS processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including land/sea tag. [PGD-3.1.1-170]

RBPGS-3.14-1-180 to RBPGS-3.14.1-190
Reserved.

RBPGS-3.14.1-200 Demo
The RBPGS processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from AVHRR/3 and HIRS/4 Level 1b* datasets. LIST-CPL [PGD-3.1.1-200]

RBPGS-3.14-1-210 to RBPGS-3.14.1-290
Reserved.

RBPGS-3.14.1-300 Demo
The RBPGS processing system shall have the capability to distribute AVHRR/3 and HIRS/4 Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300]

3.14.2 Operational

RBPGS-3.14.2-100 Demo
The RBPGS processing system shall complete the capability to receive all required Level 1b* datasets from AVHRR/3 and HIRS/4 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

RBPGS-3.14.2-110
Reserved.

RBPGS-3.14.2-120 Demo
The RBPGS processing system shall complete the capability to generate all required Level 2 products from AVHRR/3 and HIRS/4 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

RBPGS-3.14.2-130 to RBPGS-3.14.2-190
Reserved.

RBPGS-3.14.2-200 Demo
The RBPGS processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

RBPGS-3.14.2-210 to RBPGS-3.14.2-290
Reserved.

RBPGS-3.14.2-300 Demo
The RBPGS processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

RBPGS-3.14.2-310 Demo
The RBPGS processing system shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

RBPGS-3.14.2-320 to RBPGS-3.14.2-390
Reserved.

RBPGS-3.14.2-400 Demo
The RBPGS processing system shall continue the receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

RBPGS-3.14.2-410 to RBPGS-3.14.2-490
Reserved.

RBPGS-3.14.2-500 Demo
The RBPGS processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

RBPGS-3.14.2-510 to RBPGS-3.14.2-590
Reserved.

RBPGS-3.14.2-600 Demo
The RBPGS processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.14.3 Interface

RBPGS-3.14.3-100 Demo
The RBPGS processing system shall interface with the IPS element for all Level 1b* data input needs from the AVHRR/3 and HIRS/4 on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

RBPGS-3.14.3-110 to RBPGS-3.14.3-190
Reserved.

RBPGS-3.14.3-200 Demo
The RBPGS processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AVHRR/3 and HIRS/4 Level 2 and Level 3 products. [PGD-3.1.3-200]

3.14.4 Performance

RBPGS-3.14.4-100 Demo
The RBPGS processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

RBPGS-3.14.4-110 to RBPGS-3.14.4-190
Reserved.

RBPGS-3.14.4-200 Demo
The RBPGS processing system shall generate distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

RBPGS-3.14.4-210 Demo
The RBPGS processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

RBPGS-3.14.4-220 to RBPGS-3.14.4-290
Reserved.

RBPGS-3.14.4-300 Demo
The RBPGS processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-.1.4-300]

3.15 SST

The SST processing system generates operational products that include sea surface temperature observations and analyses.

3.15.1 Functional

SST-3.15.1-100 Demo
The SST processing system shall have the capability to receive Level 1b* datasets from NOAA heritage instruments, AVHRR/3, on NOAA-N and -N' satellites. [PGD-3.1.1-100]

SST-3.15.1-110 Demo
The SST processing system shall have the capability to receive Level 1b* datasets from the upgraded HIRS/4 instrument on NOAA-N and -N' satellites. [PGD-3.1.1-110]

SST-3.15.1-120
Reserved.

SST-3.15.1-130 Demo
The SST processing system shall have the capability to receive full resolution NOAA instrument Level 1b* datasets (AVHRR/3, HIRS/4) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets. [PGD-3.1.1-130]

SST-3.15.1-140 Demo
The SST processing system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets. [PGD-3.1.1-140]

SST-3.15.1-150
Reserved.

SST-3.15.1-160 Demo
The SST processing system shall have the capability to receive all Level 1b* datasets in granule format from AVHRR/3 and HIRS/4 instruments on NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.1-160]

SST-3.15.1-170 Demo
The SST processing system shall have the capability to receive all ancillary data required for generation of Level 2 products, including solar zenith angle, satellite zenith angle, solar azimuth angle, global climatological sea surface temperature file, independent sea surface temperature verification data (ship or buoy), independent sea surface temperature monthly storage file, land/sea tag, message file, nominal schedule, regression coefficient file, sea surface temperature matchup database, target rejection decision table, and visible cloud threshold table. [PGD-3.1.1-170; RD-1, section 9.1]

SST-3.15.1-180 to SST-3.15.1-190
Reserved.

SST-3.15.1-200 Demo
The SST processing system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from AVHRR/3 and HIRS/4 Level 1b* datasets. LIST-CPL [PGD-3.1.1-200]

SST-3.15.1-210 to SST-3.15.1-290
Reserved.

SST-3.15.1-300 Demo
The SST processing system shall have the capability to distribute AVHRR/3 and HIRS/4 Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required. [PGD-3.1.1-300]

3.15.2 Operational

SST-3.15.2-100 Demo
The SST processing system shall complete the capability to receive all required Level 1b* datasets from AVHRR/3 and HIRS/4 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-100]

SST-3.15.2-110
Reserved.

SST-3.15.2-120 Demo
The SST processing system shall complete the capability to generate all required Level 2 products from AVHRR/3 and HIRS/4 in accordance with Day-1 and Day-2 progressive product processing phases. [PGD-3.1.2-120]

SST-3.15.2-130 to SST-3.15.2-190
Reserved.

SST-3.15.2-200 Demo
The SST processing system shall be completed prior to IJPS ground segment level testing. [PGD-3.1.2-200]

SST-3.15.2-210 to SST-3.15.2-290
Reserved.

SST-3.15.2-300 Demo
The SST processing system shall initiate upon successful completion of NOAA On-Orbit Verification. [PGD-3.1.2-300]

SST-3.15.2-310 Demo
The SST processing system shall initiate upon successful commissioning of Metop satellites. [PGD-3.1.2-310]

SST-3.15.2-320 to SST-3.15.2-390
Reserved.

SST-3.15.2-400 Demo
The SST processing system shall continue the receipt of Level 1b* datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period. [PGD-3.1.2-400]

SST-3.14.2-410 to SST-3.14.2-490
Reserved.

SST-3.15.2-500 Demo
The SST processing system shall monitor the quality and timeliness of received Level 1b* data, and generation and delivery of Level 2 and Level 3 products. [PGD-3.1.2-500]

SST-3.15.2-510 to SST-3.15.2-590
Reserved.

SST-3.15.2-600 Demo
The SST processing system shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations. [PGD-3.1.2-600]

3.15.3 Interface

SST-3.15.3-100 Demo
The SST processing system shall interface with the IPS element for all Level 1b* data input needs from the AVHRR/3 and HIRS/4 on the NOAA-N and -N' and Metop-1 and -2 satellites. [PGD-3.1.3-100]

SST-3.15.3-110 to SST-3.15.3-190
Reserved.

SST-3.15.3-200 Demo
The SST processing system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for AVHRR/3 Level 2 and Level 3 products. [PGD-3.1.3-200]

SST-3.15.3-210 to SST-3.15.3-290
Reserved.

SST-3.15.3-300 Demo
The SST processing system shall interface with ATOVS to provide sea surface temperature data. [AD-2, 6.2]

3.15.4 Performance

SST-3.15.4-100 Demo
The SST processing system shall receive all required Level 1b* granule datasets within 135 minutes of observation. [PGD-3.1.4-100]

SST-3.15.4-110 to SST-3.15.4-190
Reserved.

SST-3.15.4-200 Demo
The SST processing system shall generate and distribute all required Level 2 and Level 3 products from NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-200]

SST-3.15.4-210 Demo
The SST processing system shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B. [PGD-3.1.4-210]

SST-3.15.4-220 to SST-3.15.4-290
Reserved.

SST-3.15.4-300 Demo
The SST processing system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B. [PGD-3.1.4-300]

4 Appendix A. Requirements Matrix

Requirement ID	Requirement Statement	Source Requirement	Allocated Requirements	Verification Method	Rationale / Comments
	3.1 General Requirements	**From AD-1**			
PGD-3.1.1-100	The PGD system shall have the capability to receive Level 1b and Level 1b* datasets from NOAA heritage instruments, AVHRR/3, AMSU-A, and SBUV/2 on NOAA-N and -N' satellites.	PGSL-3.2.2.1-010	AEROSOL-3.2.1-100 ATOVS-3.4.1-100 GVI-3.6.1-100 IMAGES-3.8.1-100 IMS-3.9.1-100 MSPPS-3.10.1-100 CWPS-3.11.1-100 OOPS-3.12.1-100 OSEI-3.13.1-100 RBPGS-3.14.1-100 SST-3.15.1-100	Demo	
PGD-3.1.1-110	The PGD system shall have the capability to receive Level 1b* datasets from the upgraded HIRS/4 instrument on NOAA-N and -N' satellites.	PGSL-3.2.2.1-010	ATOVS-3.4.1-110 RBPGS-3.14.1-110 SST-3.15.1-110	Demo	
PGD-3.1.1-120	The PGD system shall have the capability to receive Level 1b* datasets from the new MHS instrument on NOAA-N and -N' satellites.	PGSL-3.2.2.1-010	ATOVS-3.4.1-120 MSPPS-3.10.1-120	Demo	
PGD-3.1.1-130	The PGD system shall have the capability to receive full resolution common instrument Level 1b* datasets (AVHRR/3, AMSU-A, HIRS/4, MHS) from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' Level 1b* datasets.	PPGD-3.3.4.1-010, PPGD-3.3.4.1-020	AEROSOL-3.2.1-130 GVI-3.6.1-130 IMAGES-3.8.1-130 IMS-3.9.1-130 MSPPS-3.10.1-130 CWPS-3.11.1-130 OSEI-3.13.1-130 RBPGS-3.14.1-130 SST-3.15.1-130	Demo	
PGD-3.1.1-140	The PGD system shall have the capability to receive reduced resolution NOAA AVHRR Level 1b* (4 km) datasets from Metop-1 and -2 satellites in a comparable format to NOAA-N and -N' AVHRR Level 1b* GAC datasets.	PPGD-3.3.4.1-010, PPGD-3.3.4.1-020	AEROSOL-3.2.1-140 ATOVS-3.4.1-140 GVI-3.6.1-140 IMAGES-3.8.1-140 IMS-3.9.1-140 CWPS-3.11.1-140 OSEI-3.13.1-140 RBPGS-3.14.1-140 SST-3.15.1-140	Demo	
PGD-3.1.1-150	The PGD system shall have the capability to receive Metop instrument Level 1 datasets (ASCAT, IASI (1c), GRAS, GOME) from Metop-1 and -2 satellites.	PPGD-3.3.4.1-030	ASCAT-3.3.1-150 OOPS-3.12.1-150	Demo	
PGD-3.1.1-160	The PGD system shall have the capability to receive all Level 1 datasets in granule format from instruments on NOAA-N and -N' and Metop-1 and -2 satellites.	PPGD-3.3.4.1-010	AEROSOL-3.2.1-160 ASCAT-3.3.1-160 ATOVS-3.4.1-160 GVI-3.6.1-160 IMAGES-3.8.1-160 IMS-3.9.1-160 MSPPS-3.10.1-160 CWPS-3.11.1-160 OOPS-3.12.1-160 OSEI-3.13.1-160 RBPGS-3.14.1-160 SST-3.15.1-160	Demo	

Requirement ID	Requirement Statement	Source Requirement	Allocated Requirements	Verification Method	Rationale / Comments
PGD-3.1.1-170	The PGD system shall have the capability to receive all ancillary data required for generation of Level 2 products.	PPGD-3.3.4.1-050	AEROSOL-3.2.1-170 ASCAT-3.3.1-170 ATOVS-3.4.1-170 GVI-3.6.1-170 IMAGES-3.8.1-170 IMS-3.9.1-170 MSPPS-3.10.1-170 CWPS-3.11.1-170 OOPS-3.12.1-170 OSEI-3.13.1-170 RBPGS-3.14.1-170 SST-3.15.1-170	Demo	
PGD-3.1.1-180	The PGD system shall have the capability to receive Metop instrument Level 2 products (ASCAT, IASI, GRAS, GOME) from Metop-1 and -2 satellites. (TBC)	PPGD-3.3.4.1-040	ASCAT-3.3.1-180 OOPS-3.12.1-180	Demo	
PGD-3.1.1-190	Reserved.				
PGD-3.1.1-200	The PGD system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from common instrument Level 1b* datasets and NOAA's SBUV/2 Level 1b datasets.	PPGD-3.3.4.1-060, PPGD-3.3.4.1-080	AEROSOL-3.2.1-200 ATOVS-3.4.1-200 GVI-3.6.1-200 IMAGES-3.8.1-200 IMS-3.9.1-200 MSPPS-3.10.1-200 CWPS-3.11.1-200 OOPS-3.12.1-200 OSEI-3.13.1-200 RBPGS-3.14.1-200 SST-3.15.1-200	Demo	
PGD-3.1.1-210	The PGD system shall have the capability to generate, through granule processing, required Level 2 and Level 3 products from Metop instrument Level 1 datasets (TBC - if not received from SAFs)	PPGD-3.3.4.1-070, PPGD-3.3.4.1-090	ASCAT-3.3.1-210 OOPS-3.12.1-210	Demo	
PGD-3.1.1-220 to PGD-3.1.1-290	Reserved.				
PGD-3.1.1-300	The PGD system shall have the capability to distribute common instrument, and NOAA's SBUV/2, Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required.	PPGD-3.3.4.1-100	AEROSOL-3.2.1-300 ATOVS-3.4.1-300 GVI-3.6.1-300 IMAGES-3.8.1-300 IMS-3.9.1-300 MSPPS-3.10.1-300 CWPS-3.11.1-300 OOPS-3.12.1-300 OSEI-3.13.1-300 RBPGS-3.14.1-300 SST-3.15.1-300	Demo	
PGD-3.1.1-310	The PGD system shall have the capability to distribute Metop instrument Level 2 and Level 3 products to user community and archive facilities in orbital and/or pipeline mode as required.	PPGD-3.3.4.1-100	ASCAT-3.3.1-310	Demo	
PGD-3.1.2-100	The PGD system shall complete the capability to receive all required Level 1b* datasets from common instruments and Level 1b datasets from NOAA's SBUV/2 in accordance with Day-1 and Day-2 progressive product processing phases.	PPGD-3.3.4.2-010, PPGD-3.3.4.2-020, PPGD-3.3.4.2-040	AEROSOL-3.2.2-100 ATOVS-3.4.2-100 GVI-3.6.2-100 IMAGES-3.8.2-100 IMS-3.9.2-100 MSPPS-3.10.2-100 CWPS-3.11.2-100 OOPS-3.12.2-100 OSEI-3.13.2-100 RBPGS-3.14.2-100 SST-3.15.2-100	Demo	

Requirement ID	Requirement Statement	Source Requirement	Allocated Requirements	Verification Method	Rationale / Comments
PGD-3.1.2-110	The PGD system shall complete the capability to receive all required Level 1 datasets from Metop instruments in accordance with Day-1 and Day-2 progressive product processing phases.	PPGD-3.3.4.2-010, PPGD-3.3.4.2-020, PPGD-3.3.4.2-040	ASCAT-3.3.2-110 OOPS-3.12.2-110	Demo	
PGD-3.1.2-120	The PGD system shall complete the capability to generate all required Level 2 products from common instruments and NOAA's SBUV/2 in accordance with Day-1 and Day-2 progressive product processing phases.	PPGD-3.3.4.2-010, PPGD-3.3.4.2-020, PPGD-3.3.4.2-040	AEROSOL-3.2.2-120 ATOVS-3.4.2-120 GVI-3.6.2-120 IMAGES-3.8.2-120 IMS-3.9.2-120 MSPPS-3.10.2-120 CWPS-3.11.2-120 OOPS-3.12.2-120 OSEI-3.13.2-120 RBPGS-3.14.2-120 SST-3.15.2-120	Demo	
PGD-3.1.2-130	The PGD system shall complete the capability to generate all required Level 2 products from Metop instruments in accordance with Day-1 and Day-2 progressive product processing phases. (TBC)	PPGD-3.3.4.2-010, PPGD-3.3.4.2-020, PPGD-3.3.4.2-040	ASCAT-3.3.2-130 OOPS-3.12.2-130	Demo	
PGD-3.1.2-140 to PGD-3.1.2-190	Reserved.				
PGD-3.1.2-200	The PGD system shall complete the required PGD product systems prior to IJPS ground segment level testing.	PPGD-3.3.4.2-010	AEROSOL-3.2.2-200 ATOVS-3.4.2-200 GVI-3.6.2-200 IMAGES-3.8.2-200 IMS-3.9.2-200 MSPPS-3.10.2-200 CWPS-3.11.2-200 OOPS-3.12.2-200 OSEI-3.13.2-200 RBPGS-3.14.2-200 SST-3.15.2-200	Demo	
PGD-3.1.2-210 to PGD-3.1.2-290	Reserved.				
PGD-3.1.2-300	The PGD system shall initiate the required PGD product systems upon successful completion of NOAA On-Orbit Verification.	PPGD-3.3.4.2-010	AEROSOL-3.2.2-300 ATOVS-3.4.2-300 GVI-3.6.2-300 IMAGES-3.8.2-300 IMS-3.9.2-300 MSPPS-3.10.2-300 CWPS-3.11.2-300 OOPS-3.12.2-300 OSEI-3.13.2-300 RBPGS-3.14.2-300 SST-3.15.2-300	Demo	
PGD-3.1.2-310	The PGD system shall initiate the required PGD product systems upon successful commissioning of Metop satellites.	PPGD-3.3.4.2-010	AEROSOL-3.2.2-310 ATOVS-3.4.2-310 GVI-3.6.2-310 IMAGES-3.8.2-310 IMS-3.9.2-310 MSPPS-3.10.2-310 CWPS-3.11.2-310 OSEI-3.13.2-310 RBPGS-3.14.2-310 SST-3.15.2-310	Demo	
PGD-3.1.2-320 to PGD-3.1.2-390	Reserved.				

Requirement ID	Requirement Statement	Source Requirement	Allocated Requirements	Verification Method	Rationale / Comments
PGD-3.1.2-400	The PGD system shall continue the receipt of Level 1 datasets and generation of Level 2 and Level 3 products for the duration of the IJPS period.	PPGD-3.3.4.2-010	AEROSOL-3.2.2-400 ASCAT-3.3.2-400 ATOVS-3.4.2-400 GVI-3.6.2-400 IMAGES-3.8.2-400 IMS-3.9.2-400 MSPPS-3.10.2-400 CWPS-3.11.2-400 OOPS-3.12.2-400 OSEI-3.13.2-400 RBPGS-3.14.2-400 SST-3.15.2-400	Demo	
PGD-3.1.2-410 to PGD-3.1.2-490	Reserved.				
PGD-3.1.2-500	The PGD element shall monitor the quality and timeliness of received Level 1 data, and generation and delivery of Level 2 and Level 3 products.	PPGD-3.3.4.2-020	AEROSOL-3.2.2-500 ASCAT-3.3.2-500 ATOVS-3.4.2-500 GVI-3.6.2-500 IMAGES-3.8.2-500 IMS-3.9.2-500 MSPPS-3.10.2-500 CWPS-3.11.2-500 OOPS-3.12.2-500 OSEI-3.13.2-500 RBPGS-3.14.2-500 SST-3.15.2-500	Demo	
PGD-3.1.2-510 to PGD-3.1.2-590	Reserved.				
PGD-3.1.2-600	The PGD element shall coordinate with the IPS and COMM elements of the NOAA IJPS ground segment for required data and information exchanges, cross support and contingency operations.	PPGD-3.3.4.2-030	AEROSOL-3.2.2-600 ASCAT-3.3.2-600 ATOVS-3.4.2-600 GVI-3.6.2-600 IMAGES-3.8.2-600 IMS-3.9.2-600 MSPPS-3.10.2-600 CWPS-3.11.2-600 OOPS-3.12.2-600 OSEI-3.13.2-600 RBPGS-3.14.2-600 SST-3.15.2-600	Demo	
PGD-3.1.3-100	The PGD system shall interface with the IPS element for all Level 1b* data input needs from the common instruments and Level 1b datasets from NOAA's SBUV/2 on the NOAA-N and -N' and Metop-1 and -2 satellites.	PPGD-3.3.4.3-010	AEROSOL-3.2.3-100 ATOVS-3.4.3-100 GVI-3.6.3-100 IMAGES-3.8.3-100 IMS-3.9.3-100 MSPPS-3.10.3-100 CWPS-3.11.3-100 OOPS-3.12.3-100 OSEI-3.13.3-100 RBPGS-3.14.3-100 SST-3.15.3-100	Demo	
PGD-3.1.3-110	The PGD system shall interface with the IPS element for all Level 1 and Level 2 data input (if received from SAFs – TBC) needs from the Metop instruments on the Metop-1 and -2 satellites.	PPGD-3.3.4.3-010	ASCAT-3.3.3-110 OOPS-3.12.3-110	Demo	
PGD-3.1.3-120 to PGD-3.1.3-190	Reserved.				

Requirement ID	Requirement Statement	Source Requirement	Allocated Requirements	Verification Method	Rationale / Comments
PGD-3.1.3-200	The PGD system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for common instrument and NOAA's SBUV/2 Level 2 products.	PPGD-3.3.4.3-020, PPGD-3.3.4.3-030	AEROSOL-3.2.3-200 ATOVS-3.4.3-200 GVI-3.6.3-200 IMAGES-3.8.3-200 IMS-3.9.3-200 MSPPS-3.10.3-200 COASTWTACH-3.11.3-200 OOPS-3.12.3-200 OSEI-3.13.3-200 RBPGS-3.14.3-200 SST-3.15.3-200	Demo	
PGD-3.1.3-210	The PGD system shall interface with the COMM element for all ancillary input needs and user community/archive output requirements for Metop instrument Level 2 and Level 3 products.	PPGD-3.3.4.3-020, PPGD-3.3.4.3-030	ASCAT-3.3.3-210 OOPS-3.12.3-210	Demo	
PGD-3.1.4.100	The PGD system shall receive all required Level 1 granule datasets within 135 minutes of observation.	PGSL-3.2.2.1-010	AEROSOL-3.2.4-100 ASCAT-3.3.4-100 ATOVS-3.4.4-100 GVI-3.6.4-100 IMAGES-3.8.4-100 IMS-3.9.4-100 MSPPS-3.10.4-100 CWPS-3.11.4-100 OOPS-3.12.4-100 OSEI-3.13.4-100 RBPGS-3.14.4-100 SST-3.15.4-100	Demo	
PGD-3.1.4-110 to PGD-3.1.4-190	Reserved.				
PGD-3.1.4-200	The PGD system shall generate and distribute all required Level 2 and Level 3 products from instruments on NOAA-N and -N' within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B.	PGSL-3.2.2.1-010	AEROSOL-3.2.4-200 ATOVS-3.4.4-200 GVI-3.6.4-200 IMAGES-3.8.4-200 IMS-3.9.4-200 MSPPS-3.10.4-200 CWPS-3.11.4-200 OOPS-3.12.4-200 OSEI-3.13.4-200 RBPGS-3.14.4-200 SST-3.15.4-200	Demo	
PGD-3.1.4-210	The PGD shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from common instruments on Metop-1 and -2 within 180 minutes of observation in accordance with the NESDIS CPL in Appendix B.	PGSL-3.2.2.1-010	AEROSOL-3.2.4-210 ATOVS-3.4.4-210 GVI-3.6.4-210 IMAGES-3.8.4-210 IMS-3.8.4-210 MSPPS-3.10.4-210 CWPS-3.11.4-210 OSEI-3.13.4-210 RBPGS-3.14.4-210 SST-3.15.4-210	Demo	
PGD-3.1.4-220	The PGD shall generate, through granule processing, and distribute all required Level 2 and Level 3 products from unique instruments on Metop-1 and –2 within 180 minutes of observation.	PGSL-3.2.2.1-010	ASCAT-3.3.4-220 OOPS-3.12.4-220		
PGD-3.1.4-230 to PGD-3.1.4-290	Reserved.				

Requirement ID	Requirement Statement	Source Requirement	Allocated Requirements	Verification Method	Rationale / Comments
PGD-3.1.4-300	The PGD system shall generate all required Level 2 and Level 3 products per quality and resolution attributes provided in the NESDIS CPL in Appendix B.	PGSL-3.2.2.1-010	AEROSOL-3.2.4-300 ASCAT-3.3.4-300 ATOVS-3.4.4-300 GVI-3.6.4-300 IMAGES-3.8.4-300 IMS-3.8.4-300 MSPPS-3.10.4-300 CWPS-3.11.4-300 OOPS-3.12.4-300 OSEI-3.13.4-300 RBPGS-3.14.4-300 SST-3.15.4-300	Demo	

5 Appendix B. POES Consolidated Products List

NESDIS Consolidated Product List
Listed by Measurement Category
Satellite System - POES
Product Status - Operational
Produced on 17 December 2001

Atmosphere/Aerosol Properties

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Aerosol Daily Summary Statistics	Operational	NOAA-16	AVHRR/3	.03-.05 ODU	8-25 km	N/A	Global Oceans 70N-70S	Daily	NCEP/CPC, Universities, Archive- NCDC, NASA, USAF	ICAPOP
Aerosol Observations	Operational	NOAA-16	AVHRR/3	.03-.05 ODU	8-25 km	N/A	Global Oceans 70N-70S	Orbitally	NCEP/CPC, Universities, Archive- NCDC, NASA, USAF	ICAPOP
Optical Thickness Monthly Mean Analyzed Field	Operational	NOAA-16	AVHRR/3	.03-.05 ODU	100 km	N/A	Global Oceans 70N-70S	Monthly	NCEP/CPC, Universities, Archive- NCDC, NASA, USAF, Internet	ICAPOP
Optical Thickness Weekly Analyzed Field	Operational	NOAA-16	AVHRR/3	.03-.05 ODU	100 km	N/A	Global Oceans 70N-70S	Weekly	NCEP/CPC, Universities, Archive- NCDC, NASA, USAF, Archive- SAA, Internet	ICAPOP

Atmosphere/Atmospheric Moisture

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Layer Precipitable Water (AMSUB)	Operational	NOAA-15, NOAA-16	AMSU-B	10-30%	20 km	3 Layers	Global	Orbitally	Archive- NCDC, USAF, USN, AWIPS-Future	SPOP
Precipitable Water Index (GVI3)	Operational	NOAA-16	AVHRR/3	N/A	15 km	N/A	Global	Weekly	NASA, Archive- NCDC	LSPOP

Atmosphere/Atmospheric Moisture

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Total Precipitable Water (ATOVS)	Operational	NOAA-15, NOAA-16	HIRS/3	10%	45 km	1 Layer	Global	Orbitally	Archive- NCDC, USAF, NCEP, GTS Users, USN, Internet	PPOP
Total Precipitable Water Mapped (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A, AMSU-B	3 mm	45 km	1 Layer	NH, SH Oceans	Daily	NCEP/CPC, Archive- NCDC, NCEP/EMC, CIRA	PPOP
Total Precipitable Water Orbital (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A, AMSU-B	3 mm	45 km	1 Layer	Global	Orbitally	NCEP/CPC, Archive- NCDC, NESDIS/SAB, USAF, ECMWF, NCEP/EMC, MSPPS Processing System, USN, CIRA	PPOP
Water Vapor Mixing Ratios (AMSUB)	Operational	NOAA-15, NOAA-16	AMSU-B	sfc:15% 400mb:40%	16 km FOV	15 Levels	Global	Orbitally	Archive- NCDC, USAF, USN	SPOP

Atmosphere/Atmospheric Temperature

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Channel Radiances HIRS/3 (ATOVS)	Operational	NOAA-15, NOAA-16	HIRS/3	N/A	25 km	N/A	Global	Orbitally	Archive- NCDC, USAF, NCEP, GTS Users	SPOP
Geopotential Heights (ATOVS)	Operational	NOAA-15, NOAA-16	AMSU-A, AVHRR/3, HIRS/3	N/A	40 km	40 Levels	Global	Orbitally	Archive- NCDC, USAF, NCEP, GTS Users	SPOP
Layer Temperatures (ATOVS)	Operational	NOAA-15, NOAA-16	AMSU-A, AVHRR/3, HIRS/3	2.0 K	40 km	15 Layers	Global	Orbitally	AWIPS-Future, Archive- NCDC, GTS Users, USN	SPOP
Layer Thicknesses (ATOVS)	Operational	NOAA-15, NOAA-16	AMSU-A, AVHRR/3, HIRS/3	N/A	40 km	15 Layers	Global	Orbitally	WMO, Archive- NCDC, USAF, ECMWF, NCEP, GTS Users	SPOP
Level Temperatures (ATOVS)	Operational	NOAA-15, NOAA-16	AMSU-A, AVHRR/3, HIRS/3	3.0 K	40 km	40 Levels	Global	Orbitally	AWIPS-Future, Archive- NCDC, UKMO, USN	SPOP

Atmosphere/Atmospheric Temperature

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Tropopause Pressure (ATOVS)	Operational	NOAA-15, NOAA-16	AMSU-A, AVHRR/3, HIRS/3	50 mb	40 km	1 Level	Global	Orbitally	Archive- NCDC, USAF, NCEP, GTS Users, USN	SPOP
Tropopause Temperature (ATOVS)	Operational	NOAA-15, NOAA-16	AMSU-A, AVHRR/3, HIRS/3	2.5 K	40 km	1 Level	Global	Orbitally	Archive- NCDC, USAF, NCEP, GTS Users	SPOP

Atmosphere/Cloud Properties

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
AVHRR Cloud Statistics (RBPGS)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3				Global			
Cloud Liquid Water Mapped (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A	0.05 mm	45 km	N/A	NH, SH Oceans	Daily	NCEP/CPC, Archive-NCDC, USAF, NCEP/EMC, CIRA	ICAPOP
Cloud Liquid Water Orbital (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A	0.05 mm	45 km	N/A	Global Oceans	Orbitally	NCEP/CPC, Archive-NCDC, NESDIS/SAB, USAF, NCEP/EMC, MSPPS Processing System, USN, CIRA	ICAPOP
Ice Water Path Mapped (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-B		15 km	N/A	Global	Daily	Internet	ICAPOP
Ice Water Path Orbital (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-B		15 km	N/A	Global	Orbitally	Internet	ICAPOP
Scene Type Observations (RBPGS)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3		45 km	N/A	Global	Daily	Universities, RBPGS Processing System	EPOP

Atmosphere/Imagery

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
CoastWatch Imagery (OCNMAP)	Operational	NOAA-14, NOAA-16	AVHRR/2, AVHRR/3		1.5-4.5 km	N/A	26 Coastal Regions			
Daily Mercator Composite (counts)	Operational	NOAA-15, NOAA-16	AVHRR/3	N/A	9.9-100 km	N/A	-40 to 40	Daily	Archive- NCDC, NCEP, USDA, UKMO	ICAPOP
Daily Polar Composite (counts)	Operational	NOAA-15, NOAA-16	AVHRR/3	N/A	14.8-100 km	N/A	-40 to 40	Daily	UKMO, Archive- NCDC, NCEP, USDA	ICAPOP
WEFAX POES Infrared MER	Operational	NOAA-15, NOAA-16	AVHRR/3	N/A	5.8 km	N/A	Global, 18 sectors	2/Day	Archive- NCDC, NWS, NCEP, USDA, Internet	ICAPOP
WEFAX POES Infrared PSG	Operational	NOAA-15, NOAA-16	AVHRR/3	N/A	11.9 km	N/A	Global, 18 sectors	2/Day	Archive- NCDC, NWS, NCEP, USDA, Internet	ICAPOP
WEFAX POES Visible MER	Operational	NOAA-15, NOAA-16	AVHRR/3	N/A	5.8 km	N/A	Global, 26 sectors	2/Day	Archive- NCDC, NWS, NCEP, USDA, Internet	ICAPOP
WEFAX POES Visible PSG	Operational	NOAA-15, NOAA-16	AVHRR/3	N/A	11.9 km	N/A	Global, 26 sectors	2/Day	Archive- NCDC, NWS, NCEP, USDA, Internet	ICAPOP

Atmosphere/Ozone

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Layer Ozone Daily (OOPS)	Operational	NOAA-11, NOAA-14, NOAA-16	SBUV/2	5%	200 km	12 Layers	Global	Daily	NCEP/CPC, Archive- NCDC, NASA/GSFC, BMRC	ZPOP
Layer Ozone Orbitally (ROPES)	Operational	NOAA-11, NOAA-14, NOAA-16	SBUV/2	5%	200 km	12 Layers	Global	Orbitally	NCEP/EMC	ZPOP
Level Ozone Daily (OOPS)	Operational	NOAA-11, NOAA-14, NOAA-16	SBUV/2	5%	200 km	19 Levels	Global	Orbitally	NCEP/CPC, Archive- NCDC, NASA/GSFC, BMRC	ZPOP

Atmosphere/Ozone

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Level Ozone Orbitally (ROPES)	Operational	NOAA-11, NOAA-14, NOAA-16	SBUV/2	5%	200 km	19 Levels	Global	Orbitally	NCEP/EMC	ZPOP
Total Ozone (ATOVS)	Operational	NOAA-15, NOAA-16	HIRS/3	3%	40 km	N/A	Global	Orbitally	NCEP/CPC, Archive-NCDC, USAF, GTS Users, USN	ZPOP
Total Ozone Daily (OOPS)	Operational	NOAA-11, NOAA-14, NOAA-16	SBUV/2	1%	200 km	N/A	CONUS w/ oceans	Daily	NCEP/CPC, Archive-NCDC, NASA/GSFC, BMRC	ZPOP
Total Ozone Orbitally (ROPES)	Operational	NOAA-11, NOAA-14, NOAA-16	SBUV/2	1%	200 km	N/A	Global	Orbitally	NCEP/EMC	ZPOP

Atmosphere/Precipitation

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Rain Rate Mapped (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A, AMSU-B	2 mm/hr	16 km	N/A	Global	Daily	AWIPS-Future, NCEP/CPC, Archive-NCDC, USAF, NCEP, CIRA	PPOP
Rain Rate Orbital (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A, AMSU-B	2 mm/hr	16 km	N/A	Global	Orbitally	AWIPS-Future, NCEP/CPC, Archive-NCDC, NESDIS/SAB, USAF, NCEP/EMC, MSPPS Processing System, USN, CIRA	PPOP

Atmosphere/Volcanic Events

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Significant Volcano Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		Various	N/A	Various	As Needed	Internet, Media, FEMA, Archive- SSD	SOP

Earth Radiation/Outgoing Longwave Radiation

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
OLR Annual Mean (AHVRR)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Annual	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
OLR Annual Mean (HIRS)	Operational	NOAA-14, NOAA-15, NOAA-16	HIRS/2, HIRS/3	5 W/m^2	1 x 1 Equal Area	N/A	Global	Annual	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
OLR Daily Analysis (AVHRR)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Daily 37Day Rotate	Universities, RBPGS Processing System, SAA Anonymous FTP	EPOP
OLR Daily Analysis (HIRS)	Operational	NOAA-14, NOAA-15, NOAA-16	HIRS/2, HIRS/3	5 W/m^2	1 x 1 Equal Area	N/A	Global	Daily 37Day Rotate	Universities, RBPGS Processing System, SAA Anonymous FTP	EPOP
OLR Histograms	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Daily	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
OLR Monthly Mean (AVHRR)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Monthly	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
OLR Monthly Mean (HIRS)	Operational	NOAA-14, NOAA-15, NOAA-16	HIRS/2, HIRS/3	5 W/m^2	1 x 1 Equal Area	N/A	Global	Monthly	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
OLR Observations (AVHRR)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	45 km	N/A	Global	Orbitally	Universities, RBPGS Processing System, SAA Anonymous FTP	EPOP
OLR Observations (HIRS)	Operational	NOAA-14, NOAA-15, NOAA-16	HIRS/2, HIRS/3	5 W/m^2	17 km	N/A	Global	Orbitally	Universities, RBPGS Processing System, SAA Anonymous FTP	EPOP

Earth Radiation/Outgoing Longwave Radiation

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
OLR Seasonal Mean (AVHRR)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Seasonal	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
OLR Seasonal Mean (HIRS)	Operational	NOAA-14, NOAA-15, NOAA-16	HIRS/2, HIRS/3	5 W/m^2	1 x 1 Equal Area	N/A	Global	Seasonal	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
OLR Variance	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Daily	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP

Earth Radiation/Shortwave Radiation

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Absorbed Solar Radiation Histogram	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Daily	NCEP/CPC, Archive-NCDC, NASA, NESDIS/ORA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
Absorbed Solar Radiation Variance	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Daily	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
Absorbed SW Solar Radiation Annual Mean	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Annual	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
Absorbed SW Solar Radiation Daily Analysis	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Daily 37Day Rotate	Universities, RBPGS Processing System, SAA Anonymous FTP	EPOP

Earth Radiation/Shortwave Radiation

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Absorbed SW Solar Radiation Monthly Mean	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Monthly	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP
Absorbed SW Solar Radiation Observations	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	45 km	N/A	Global	Orbitally	Universities, RBPGS Processing System, SAA Anonymous FTP	EPOP
Absorbed SW Solar Radiation Seasonal Mean	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3	7 W/m^2	1 x 1 Equal Area	N/A	Global	Seasonal	NCEP/CPC, Archive-NCDC, NASA, NOAA/ERL, BMRC, NCAR, SAA Anonymous FTP	EPOP

Instrument Products/1B Products

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
AMSU-A 1B	Operational	NOAA-15, NOAA-16	AMSU-A	Cal: <0.1K	45 km	N/A	Global	Orbitally	Archive- NCDC, NWS, UKMO, NCEP/EMC, Archive- SAA	IDPOP
AMSU-A 1B*	Operational	NOAA-15, NOAA-16	AMSU-A	Cal: <0.1K	45 km	N/A	Global	Orbitally	ATOVS Processing System, MSPPS Processing System, 1BTrans	IDPOP
AMSU-B 1B	Operational	NOAA-15, NOAA-16	AMSU-B	Cal: <0.1K	16 km	N/A	Global	Orbitally	Archive- NCDC, NWS, UKMO, NCEP/EMC, Archive- SAA	IDPOP
AMSU-B 1B*	Operational	NOAA-15, NOAA-16	AMSU-B	Cal: <0.1K	16 km	N/A	Global	Orbitally	MSPPS Processing System, AMSUB Processing System, 1BTrans	IDPOP
AVHRR/3 GAC 1B	Operational	NOAA-15, NOAA-16	AVHRR/3	Cal: <0.2K	4 km	N/A	Global	Orbitally	Archive- NCDC, NWS, IMS Processing System, Archive- SAA, OSEI Processing System	IDPOP

Instrument Products/1B Products

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
AVHRR/3 GAC 1B*	Operational	NOAA-15, NOAA-16	AVHRR/3	Cal: <0.2K	4 km	N/A	Global	Orbitally	RBPGS Processing System, MUT (SST) Processing System, IMGMAP (CW) Processing System, ATOVS Processing System, 1BTrans, IMGMAP (IMAGES) Processing System	IDPOP
AVHRR/3 HRPT 1B	Operational	NOAA-15, NOAA-16	AVHRR/3	Cal: <0.2K	1 km	N/A	Global (CDAs)	Orbitally	Archive- NCDC, NWS, NIC, Archive- SAA, OSEI Processing System, NAVOCEANO	IDPOP
AVHRR/3 HRPT 1B*	Operational	NOAA-15, NOAA-16	AVHRR/3	Cal: <0.2K	1 km	N/A	Global (CDAs)	Orbitally	MUT (SST) Processing System, IMGMAP (CW) Processing System, 1BTrans	IDPOP
AVHRR/3 LAC 1B	Operational	NOAA-15, NOAA-16	AVHRR/3		1 km	N/A	Global	Orbitally	Archive- NCDC, NWS, NIC, Archive- SAA, OSEI Processing System, NAVOCEANO	IDPOP
AVHRR/3 LAC 1B*	Operational	NOAA-15, NOAA-16	AVHRR/3		1 km	N/A	Global	Orbitally	MUT (SST) Processing System, IMGMAP (CW) Processing System, 1BTrans	IDPOP
HIRS/3 1B	Operational	NOAA-15, NOAA-16	HIRS/3	Cal: <0.2K	17 km	N/A	Global	Orbitally	Archive- NCDC, NWS, UKMO, NCEP/EMC, Archive- SAA	IDPOP
HIRS/3 1B*	Operational	NOAA-15, NOAA-16	HIRS/3	Cal: <0.2K	17 km	N/A	Global	Orbitally	RBPGS Processing System, MUT (SST) Processing System, ATOVS Processing System, 1BTrans	IDPOP
SBUV 1B	Operational	NOAA-11, NOAA-14	SBUV/2		169 km	N/A	Global	Orbitally	Archive- NCDC, NWS, OOPS Processing System	IDPOP
SEM/2 1B	Operational	NOAA-15, NOAA-16	SEM (POES)/2	EL: 0.5-1 km	N/A	N/A	Global	Orbitally	Archive- NGDC, NOAA/SEC, NWS	IDPOP

Instrument Products/Brightness Temperatures

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Brightness Temperatures AMSU-A (ATOVS)	Operational	NOAA-15, NOAA-16	AMSU-A	0.1 K	45 km@HIRS Ret	N/A	Global	Orbitally	Archive- NCDC, USAF, ATOVS Processing System, USN	IDPOP
Brightness Temperatures AMSU-A (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A	0.1 K	45 km	N/A	Global	Orbitally	Archive- NCDC, NESDIS/SAB, MSPPS Processing System	IDPOP
Brightness Temperatures AMSU-B (AMSUB)	Operational	NOAA-15, NOAA-16	AMSU-B	0.1 K	16 km FOV	N/A	Global	Orbitally	Archive- NCDC, AMSUB Processing System, USN	IDPOP
Brightness Temperatures AMSU-B (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-B	0.1 K	16 km	N/A	Global	Orbitally	Archive- NCDC, NESDIS/SAB, MSPPS Processing System	IDPOP
Brightness Temperatures HIRS/3 (ATOVS)	Operational	NOAA-15, NOAA-16	HIRS/3	0.1 K	17 km	N/A	Global	Orbitally	Archive- NCDC, USAF, ATOVS Processing System, USN	IDPOP

Land/Dust Storm Events

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Significant Dust Storm Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		Various	N/A	Various	As Needed	Internet, Media, FEMA, Archive- SSD	SOP

Land/Fire and Smoke Events

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Significant Fire Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		Various	N/A	Various	As Needed	Internet, Media, FEMA, Archive- SSD	SOP

Land/Flooding Events

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Significant Flooding Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		Various	N/A	Various	As Needed	Archive- SSD, Internet, Media, FEMA	SOP

Land/Land Surface Emissivity

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Land Surface Emissivity Mapped (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A			N/A	Global	Daily		
Land Surface Emissivity Orbital (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A			N/A	Global	Orbitally		

Land/Land Surface Temperature

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Skin Temperatures (ATOVS)	Operational	NOAA-15, NOAA-16	AMSU-A, AVHRR/3, HIRS/3	N/A	40 km	N/A	Global	Orbitally	USAF	LSPOP

Land/Severe Weather Events

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Significant Severe Weather Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		Various	N/A	Various	As Needed	Archive- SSD, Internet, Media, FEMA	SOP

Land/Snow and Ice Cover

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Significant Snow/Ice Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		Various	N/A	Various	As Needed	Archive- SSD, Internet, Media, FEMA	SOP
Snow Cover Analysis NH Climatological (IMS)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		23 km	N/A	NH	Monthly	Archive- NCDC	LSPOP
Snow Cover Analysis NH Daily (IMS)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		23 km	N/A	NH	Daily	NCEP/CPC, Archive-NCDC, NCEP/EMC, NCEP/HPC	LSPOP
Snow Cover Analysis NH Weekly (IMS)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		23 km	N/A	NH	Weekly	Archive- NCDC, NWS/RFCs, USACE	LSPOP
Snow Cover Anomaly NH (IMS)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		23 km	N/A	NH	Monthly	Archive- NCDC	LSPOP
Snow Cover Frequency NH (IMS)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		23 km	N/A	NH	Monthly	Archive- NCDC	LSPOP
Snow Cover Mapped (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A, AMSU-B	10%	45 km	N/A	NH, SH	Daily	NCEP/CPC, Archive-NCDC, USAF, NCEP, IMS Processing System, CIRA	LSPOP
Snow Cover Orbital (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A, AMSU-B	10%	45 km	N/A	Global	Orbitally	NCEP/CPC, Archive-NCDC, USAF, NCEP, MSPPS Processing System, USN, CIRA	LSPOP

Land/Tropical Events

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Significant Tropical Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3, Imager, MVIRI, VISSR		Various	N/A	Various	As Needed	Archive- SSD, Internet, Media, FEMA	SOP

Land/Vegetation Index

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Mapped NDVI Daily (GVI2)	Operational	NOAA-16	AVHRR/3	N/A	15 km	N/A	Global	Daily	Archive- NCDC	LSPOP
Mapped NDVI Daily (GVI3)	Operational	NOAA-16	AVHRR/3	N/A	15 km	N/A	Global	Daily	Archive- NCDC, NASA	LSPOP
Mapped NDVI Weekly (GVI2)	Operational	NOAA-16	AVHRR/3	N/A	15 km	N/A	Global	Weekly	Archive- NCDC	LSPOP
Mapped NDVI Weekly (GVI3)	Operational	NOAA-16	AVHRR/3	N/A	15 km	N/A	Global	Weekly	NASA, Archive- NCDC	LSPOP

Ocean/Oil Spill Events

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Significant Oil Spill Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3		Various	N/A	Various	As Needed	Archive- SSD, Internet, Media, FEMA	SOP

Ocean/Sea Ice

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Global Ice Analysis (NIC)	Operational	NOAA-14, NOAA-15	AVHRR/2, AVHRR/3, OLS, SAR (RADARSAT), SSM/I			N/A	Global	Weekly		
Northern Hemisphere Ice Forecast (NIC)	Operational	NOAA-14, NOAA-15	AVHRR/2, AVHRR/3, OLS, SAR (RADARSAT), SSM/I			N/A	N. Hemisphere	Monthly		
Sea Ice Concentration Mapped (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A, AMSU-B	15%	45 km	N/A	NH, SH Oceans	Daily	Archive- NCDC, USAF, NCEP/EMC	LSPOP
Sea Ice Concentration Orbital (MSPPS)	Operational	NOAA-15, NOAA-16	AMSU-A, AMSU-B	15%	45 km	N/A	Global	Orbitally	Archive- NCDC, USAF, NCEP, MSPPS Processing System, USN	LSPOP
Significant Iceberg Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3		Various	N/A	Various	As Needed		

Ocean/Sea Surface Temperature

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
CoastWatch Albedo (OCNMAP)	Operational	NOAA-12, NOAA-14	AVHRR/2			N/A	Regional	Orbitally		
CoastWatch SST High Resolution (POES)	Operational	NOAA-14, NOAA-16	AVHRR/2, AVHRR/3	0.5 deg C	1.5 km	N/A	26 Coastal Regions	4/Day	NWS, NIC, NMFS/NE, NCEP/EMC, NCEP/TPC, Archive-NODC, NMFS/SE, NMFS/Gulf of Mexico, GLERL	OPOP

Ocean/Sea Surface Temperature

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
CoastWatch SST Low Resolution (POES)	Operational	NOAA-14, NOAA-16	AVHRR/2, AVHRR/3	0.5 deg C	4.5 km	N/A	14 Coastal Regions	4/Day	NWS, NIC, NMFS/NE, NCEP/EMC, NCEP/TPC, Archive- NODC, NMFS/SE, NMFS/Gulf of Mexico, GLERL	OPOP
Significant SST Events (OSEI)	Operational	NOAA-14, NOAA-15, NOAA-16	AVHRR/2, AVHRR/3		Various	N/A	Various	As Needed	Media, Internet, Archive- NCDC	SOP
SST Global Observations (NAVOCEANO)	Operational	NOAA-15, NOAA-16	AVHRR/3, HIRS/3	0.5 deg C	8 km	N/A	Global		SST Processing System, Archive- NCDC	OPOP
SST Global Observations (NOAA)	Operational	NOAA-15, NOAA-16	AVHRR/3, HIRS/3	0.5 deg C	8 km	N/A	Global	Every 6 Hours	Archive- NCDC, GTS Users, ATOVS Processing System, AMSUB Processing System, SSM/T Processing System, SSM/T2 Processing System, SST Processing System	OPOP
SST Global Scale Analysis 100 km (POES)	Operational	NOAA-15, NOAA-16	AVHRR/3, HIRS/3	0.5 deg C	100 km	N/A	Global	Daily	NOAA/OPC, NCEP/CPC, WMO, Archive- NCDC, NWS, NCEP/EMC, Archive- SAA, Internet	OPOP
SST Global Scale Analysis 50 km (POES)	Operational	NOAA-15, NOAA-16	AVHRR/3, HIRS/3	0.5 deg C	50 km	N/A	Global	Daily	Archive- SAA, Internet	OPOP
SST Local Analyzed Fields (POES)	Operational	NOAA-15, NOAA-16	AVHRR/3, HIRS/3	0.5 deg C	14 km	N/A	4 Regions	2/Week	NOAA/OPC, NCEP/CPC, NWS/WFOs, WMO, Archive- NCDC, Coast Guard, NCEP/EMC, Internet	OPOP
SST Monthly Mean (POES)	Operational	NOAA-15, NOAA-16	AVHRR/3, HIRS/3	0.5 deg C	250 km	N/A	Global	Monthly	WMO, Archive- NCDC, NWS	OPOP

Ocean/Sea Surface Temperature

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
SST North American Field (POES)	Operational	NOAA-15, NOAA-16	AVHRR/3, HIRS/3	0.5 deg C	14 km	N/A	NCEP/ETA Region	Every 2 Days	Archive- NCDC, NCEP/EMC, Archive-SAA, Internet	OPOP
SST Regional Analyzed Fields (POES)	Operational	NOAA-15, NOAA-16	AVHRR/3, HIRS/3	0.5 deg C	50 km	N/A	5 Regions	2/Week	NOAA/OPC, NCEP/CPC, NWS/WFOs, WMO, NCEP/EMC, Internet	OPOP

6 Appendix C. QuikSCAT Consolidated Products List

NESDIS Consolidated Product List
Listed by Measurement Category
Satellite System - QuikSCAT
Product Status - Operational
Produced on 17 December 2001

Ocean/Surface Winds

Product	Status	Satellites	Sensors	Accuracy	Horizontal Resolution	Vertical Resolution	Coverage	Frequency	Users	POP
Ocean Surface Wind Speed and Direction (QuikSCAT)	Operational	QuikSCAT	SeaWinds	2 m/s, 20 deg	25 km	N/A	Global Oceans		AWIPS-Future, NWS, NESDIS/SAB, NCEP/TPC, DOD, NAVOCEANO, AFWA, NCEP/MPC	WPOP

7 Appendix D. Acronyms and Abbreviations

AAS	Archive & Access System
AD	Applicable Document
A-DCS	Advanced DCS
AEROSOL	Aerosol processing system
AFWA	Air Force Weather Agency
AIP	AMSU Information Processor
AMSU-A	Advanced Microwave Sounding Unit-A
AMSU-B	Advanced Microwave Sounding Unit-B
AMSUB	Atmospheric moisture processing system
APT	Automatic Picture Transmission
ARGOS	Advanced Data Collection and Location System
ASCAT	Advanced Scatterometer
ATN	Advanced TIROS-N
ATOVS	Advanced TIROS Operational Vertical Sounder
AVHRR	Advanced Very High Resolution Radiometer
AWIPS	Advanced Weather Interactive Processing System
BMRC	Bureau of Meteorology Research Center (Australia)
CCSDS	Consultative Committee for Space Data Systems
CDA	Command and Data Acquisition (Station)
CEMSCS	Central EnvironMental Satellite Computer System
CIRA	Cooperative Institute for Research in the Atmosphere
CLAVR	Clouds from AVHRR
COMM	Communications infrastructure
CONUS	Continental United States
COP	Calibration Oversight Panel
COTS	Commercial Off-the-shelf
CPC	Climate Prediction Center
CW	CoastWatch
CWPS	CoastWatch Processing System
DCS	Data Collection and Location System
DOD	Department of Defense
DTR	Digital Tape Recorder
DVI	Scaled Difference Vegetation Index
ECMWF	European Centre for Medium Range Weather Forecasts
EDR	Environmental Data Record
EMC	Environmental Modeling Center
EPOP	Earth Radiation Budget Product Oversight Panel
EPS	EUMETSAT Polar System
ESA	European Space Agency
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites

FEMA	Federal Emergency Management Agency
FRAC	Full Resolution Area Coverage
FUNCT	Functional Requirement
GAC	Global Area Coverage
GMS	Geostationary Meteorological Satellite
GOES	Geostationary Operational Environmental Satellite
GOME	Global Ozone Monitoring Experiment
GRAS	Global navigation satellite system Receiver for Atmospheric Sounding
GS	Ground Segment
GSFC	Goddard Space Flight Center
GTS	Global Telecommunications System
GVI	Global Vegetation Index processing system
HIRS	High-Resolution Infrared Radiation Sounder
HPT	Hydrometeorological Prediction Center
HRPT	High Resolution Picture Transmission
IASI	Infrared Atmospheric Sounding Interferometer
ICAPOP	Images, Clouds, and Aerosols Product Oversight Panel
ICD	Interface Control Document
IDPOP	Instrument Database Product Oversight Panel
IJPS	Initial Joint Polar-orbiting Operational Satellite System
IMAGES	Images processing system
IMGMAP	Image Map processing system
IMS	Interactive Multi-sensor Snow and Ice Mapping processing system
IPO	Integrated Program Office
IPS	Information/Data Processing System
JORP	Joint Operations, Rules, and Procedures
LAC	Local Area Coverage
LPOP	Land Product Oversight Panel
LRPT	Low Resolution Picture Transmission
LST	Local Solar Time
Metop	Meteorological Operational Satellite
MHS	Microwave Humidity Sounder
MIRP	Manipulated Information Rate Processor
MPC	Marine Prediction Center
MSPPS	Microwave Surface and Precipitation Products System
NASA	National Aeronautics and Space Administration
NAVOCEANO	Naval Oceanographic Office
NCDC	National Climatic Data Center

NCEP	National Centers for Environmental Prediction
NDVI	Normalized Difference Vegetation Index
NESDIS	National Environmental Satellite, Data, and Information Service
NGDC	National Geophysical Data Center
NIC	National Ice Center processing system
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOBS	
NODC	National Oceanographic Data Center
NOHRSC	National Operational Hydrologic Remote Sensing Center
NOP	Navigation Oversight Panel
NPOESS	National Polar-orbiting Operational Environmental Satellite System
NRT	Near-real-time processing system
NWS	National Weather Service
OCNMAP	Ocean Map processing system
OCPOP	Ocean Color Product Oversight Panel
OLR	Outgoing Longwave Radiation
OOPS	Operational Ozone Product System
OPOP	Ocean Product Oversight Panel
ORA	Office of Research and Applications
OSD	Office of Systems Development
OSDPD	Office of Satellite Data Processing and Distribution
OSEI	Operational Significant Event Imagery processing system
OSO	Office of Satellite Operations
PCDAS	EUMETSAT Polar Command and Data Acquisition Station
PGD	Product Generation and Distribution system
PGS	Polar Ground Segment
PIP	Program Implementation Plan
POES	Polar-orbiting Operational Environmental Satellite
POP	Product Oversight Panel
PPOP	Precipitation Product Oversight Panel
PWI	Precipitable Water Index
QuikSCAT	Quick Scatterometer
RBPGS	Radiation Budget Product Generation System
RD	Reference Document
RDE	Reference Document EUMETSAT
RDN	Reference Document NOAA
ROPES	Real-Time Ozone Processing Extended System
S&R	Search and Rescue
SAA	Satellite Active Archive
SAB	Satellite Analysis Branch

SARP	Search and Rescue Processor
SARR	Search and Rescue Repeater
SARSAT	Search and Rescue Satellite-Aided Tracking
SBUV	Solar Backscatter Ultra Violet Spectral Radiometer
SCR	System Commissioning Review
SEC	Space Environment Center
SEM	Space Environment Monitor
SOCC	Satellite Operations Control Center
SOP	Services Oversight Panel
SPN	Shared Processing Network
SPOP	Soundings Product Oversight Panel
SSD	Satellite Services Division
SSM/I	Special Sensor Microwave Imager
SSM/T	Special Sensor Microwave Temperature Sounder
SSM/T2	Special Sensor Microwave Water Vapor Profiler
SSR	Solid State Recorder
SST	Sea Surface Temperature processing system
TBC	To Be Confirmed
TIP	TIROS information processor
TIROS	Television Infrared Observation Satellite
TOMS-EP	Total Ozone Mapping Spectrometer-Earth Probe
TPC	Tropical Prediction Center
UKMO	United Kingdom Meteorological Office
US	United States
USACE	US Army Corps of Engineers
USAF	United States Air Force
USDA	United States Department of Agriculture
USN	United States Navy
VCDU	Virtual Channel Data Unit
WPOP	Winds Product Oversight Panel
WMO	World Meteorological Organization
ZPOP	Ozone Product Oversight Panel

8 Distribution List

Loc. No.	Organization	Name	Address	Copies
National Oceanic and Atmospheric Administration (NOAA)				
OSD				
	NOAA/OSD	Michael Mignogno		
	NOAA/OSD	James Silva		
	NOAA/OSD	Pamela Taylor		
	NOAA/OSD	Tom Schott		
	NOAA/OSD	Kirk Liang		
OSDPD				
	NOAA/OSDPD	Mike Kane		
	NOAA/OSDPD	Wendell Clouse		
	NOAA/OSDPD	Vincent Tabor		
	NOAA/OSDPD	Emily Harrod		
NCDC				
	NOAA/NCDC	Geoff Goodrum		
NOAA / Contractor				
	NOAA/Aerospace	Louis Moss		
	NOAA/Aerospace	Vern Olson		
	NOAA/Aerospace	Marilyn Dubas		
	NOAA/CSC	Ken Jarva		
	NOAA/CSC	Dave Morel		
	NOAA/Mitretek	Stacy Bunin		
	NOAA/Mitretek	Larry Deem		
	NOAA/Mitretek	Diane Holmes		
	NOAA/Mitretek	John Linn		
	NOAA/Mitretek	Nath Srinivas		
	NOAA/Mitretek	Mohammad Zataari		
			TOTAL	